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ABSTRACT

This guide identifies ways of improving the program offerings by regular classroom teachers for students identified as gifted learners, through planned enrichment strategies. An introductory section outlines conditions prevalent in public schools that suggest the need for alternative strategies for the instruction of gifted learners, lists the major characteristics of gifted learners, distinguishes between the gifted student and the gifted learner, and outlines basic beliefs about the education of gifted learners. Part A then presents 33 strategies for education of gifted learners that are of an administrative and broad curricular nature. The strategies include such approaches as allowing gifted learners to test out of a skill or content area, organizing academic fairs, developing interdisciplinary courses, utilizing independent study or contracting, and others. For each strategy, the guide notes the characteristics of gifted learners that are served by that strategy, how to implement the strategy, what the strategy accomplishes, and variations to be considered. Part B contains teaching strategies for specific subject areas, including art, business education, drama, driver education, English, foreign language, health/safety, home economics, industrial arts, mathematics, music, physical education, reading, science, and social studies. An appendix outlines characteristics of gifted learners and lists experts who have had a significant impact on the education of the gifted. (JDD)

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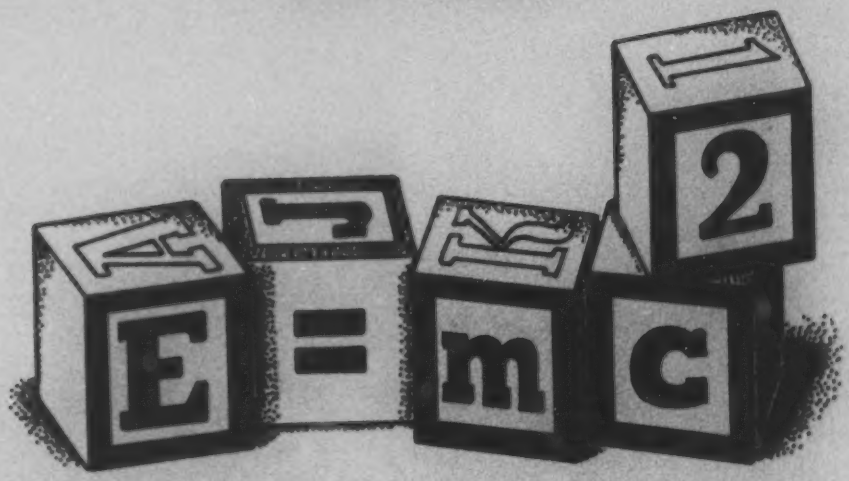
GIFTED LEARNERS

K-12



A PRACTICAL GUIDE TO EFFECTIVE CURRICULUM & TEACHING

KENNETH R. CHUSKA

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GIFTED LEARNERS

K-12

A PRACTICAL GUIDE to EFFECTIVE

CURRICULUM & TEACHING

KENNETH R. CHUSKA

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Introduction

INTRODUCTION

Both tradition and law in American education provide for meeting the needs of various student groups:

- Specialists in hearing, speech, sight conservation, and physical therapy speak to the needs of students with those handicaps.
- Teachers of children with learning disabilities make adaptations in the regular classroom to provide specific help for those children.
- Special education classes are available for students with social, emotional, and mental deficiencies.
- Courses of study are addressed to the education of the major portion of the students in any school district.
- Due process has been extended to parents of students who have been identified as gifted learners.

This book has a related singular focus - that of identifying ways of improving the program offerings by the regular classroom teacher for students identified as gifted learners. A sequential continuum of planned enrichment strategies for the classroom offers an important method of providing for the gifted learners. It provides a base from which gifted learners can operate both from a content and environmental standpoint.

Classroom enrichment is only one of the thrusts needed, however. It behooves the school also to provide appropriate programs utilizing resources and experiences outside of the regular classrooms. The two thrusts - subject enrichment and acceleration, or special education programs - must each be recognized for their unique contributions and also be integrated.

The thrust is not to ignore needs of all other students but rather to focus on providing for the characteristics unique to gifted learners.

Thus, this book is intended to serve as a reference for those who are looking for strategies to improve the quality of their existing programming for gifted students. These alternative strategies presented are options for providing the desired degree of quality programming for gifted learners.

Below are some of the premises upon which this booklet is based:

- Not enough quality educational opportunities are being provided in a comprehensive and articulated manner, K-12, in either regular or special education.
- Often, too much emphasis is placed on meeting the minimum that the law or mandate requires rather than serving identified needs of gifted learners.

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- Using one strategy or a single plan is usually not sufficient to provide for the range and variety of giftedness.
- The provisions for gifted learners in districtwide regular education programs are spotty at best, nonexistent, or at a very low level.
- There is much in the literature about the education of the gifted and successful practices nationwide that is being ignored. The strategies presented herein draw on this knowledge base.
- The greater the percentage of gifted, the greater the need for a variety of strategies for their instruction.
- Making an accelerated placement of a gifted student is a recognition of ability.
- There is a lack of long-term, in-service opportunities for teachers to whom gifted are assigned.

The strategies are presented in two sections - Part A and Part B. Part A includes strategies that are of an administrative and broad curricular nature, while Part B offers alternatives that are directly related to specific subject areas.

The One-Room School Concept In Today's Organization

Consider this: the evolution of the ways schools have become organized has created learning barriers for the gifted, and related obstacles to lowering or eliminating those barriers for teachers and administrators. The early schools were usually one-room affairs (a subject of much derision today). However, gifted students, in attending that type of school, could not be prevented from learning what was being taught to any group of students, particularly older students. In the one-room school, acceleration and enrichment had to be accepted by the teacher and administration because there was no way to "hide" the advanced content, instruction, materials, and class discussions of older and more advanced students. Thus, the curriculum and instruction of the one-room school could be considered open-ended and non-graded. If a student wanted to, or was able to learn advanced topics and/or subjects or have access to advanced materials, little special provision had to be made.

But today, those same enrichment and acceleration possibilities of the one-room school have to be accomplished by more complex administrative and instructional decisions because of the general practice of using chronological ages to determine grade (and therefore, all too often) instructional level placement. The strategies in this book provide ways for returning to the open-endedness and non-gradedness opportunities of the one-room school concept for gifted learners in spite of the context of today's chronologically-based organizational pattern.

Several questions have to be raised concerning the decisions made about educating gifted learners:

- How will the other side of the dual nature of a gifted learner - that of mental age and ability - be accommodated in a chronological age-based assignment organization?
- If the curriculum is believed to constitute a continuum, which educational and personal student factors should be taken into account in regard to the placement of gifted learners on that continuum?
- Once placed, what criteria and pratices should be used to enable the gifted learner's pace and progress through the curriculum to be appropriate?
- Since curriculum is usually written to accommodate the majority of the group to be served, what methods should exist to allow and cause the necessary modifications, of both an enrichment and acceleration nature, to be made?
- What flexibilities should be built into the administrative and organizational procedures and practices to accommodate the identified needs and necessities for the education of gifted learners?

The power to make the decisions that answer these questions lies in the hands of the educators who are given the administrative, curricular, and instructional responsibility for their educational programming. To paraphrase Pogo: **We have met the decision-makers, and they is us!**

Conditions That Require Alternative Strategies

In addition to organizational pattern, several conditions prevalent in public schools today suggest the need for alternative strategies for the instruction of gifted learners.

- Most teachers and administrators report that they have not done much specific in-depth study and/or had much instruction about giftedness and gifted education.
- Students' educational placement and pace of instruction are too often based on chronological age and the group rather than mental age or existing evidence of their individual advanced learning.
- The district curricular objectives are written to be appropriate for most of the students in a particular grade or course and not for the students who are at the extremes in learning ability. In addition, they are written for what most students should be expected to learn in 180 days.
- Texts are written, chosen, and purchased based on what is known (or believed to be known) about that which most of the students in that grade level (or those that elect a given course) can learn or "handle".
- Research has shown that the level of teaching in most classrooms is geared to the average of the group's composition.
- Research and field studies consistently show that evaluation of student learning is still too much confined to tests that require only memorization and other low levels of learning.
- Much classroom instruction is based on assumptions about that which students know and do not know, can or cannot do, rather than on pretests in the skills areas and surveys in the content areas that would provide specific knowledge about the students' existing knowledges and skills.
- More specifically, the number of practice exercises found in texts in skill areas and the number assigned (e.g. in math, reading, spelling) are more often used as "time fillers" rather than the number necessary to prove competence and understanding.
- Students who learn to read before they come to school, or who are engaged in high level or advanced reading outside of school are often held at grade level in both reading and the content areas.

Major Characteristics of Gifted Learners

Many major characteristics of gifted learners are ignored and not provided for in the typical classroom and school. For example, gifted learners may

- learn things at an earlier age than other students
- learn things in a shorter period of time than others and with less practice
- demonstrate advanced levels of comprehension
- have an unusual capacity for retaining and processing information
- display a high degree of initiative and intrinsic motivation
- prefer to be with older students because they are nearer their mental age
- have a need for freedom and provision for individuality in their learning
- be interested in topics usually described as "adult" such as religion, politics, and societal concerns
- display a curiosity about topics that are often both eclectic or intensely focused
- demonstrate a high degree of responsibility

See the appendix for a more extensive list of gifted learner characteristics. These characteristics are often in conflict with the conditions of schooling discussed in the preceeding section.

The Gifted Student vs. The Gifted Learner

Since the latest nationwide interest in the gifted began under then Secretary of Education Sidney Marland, the terms "gifted" and "gifted student" have elicited many connotations that are negative and misunderstood, in addition to drawing needed attention to this group. There is no doubt that this is partially because of the way that students are identified, based mainly on quantitative measures and not on other important factors such as productivity, initiative, perserverance, and creativity. Language also contributes to the misconceptions. The term "gifted" should never be used without a descriptive adjective, some qualifier that indicates the kind or type or level of giftedness that is being attributed to a student or group of students. Thus, a student should be described as musically gifted, mathematically gifted, academically gifted in an area, creatively gifted in an area, gifted in composition, but never just "gifted."

The identification of gifted students is usually based on quantifiabie data: standardized test scores (group and individual), grades, teacher nominations based on those data, and teacher-made test results. Sometimes subjectively rated checklists are used but quantitatively tallied. Students are identified on these bases and also by the fact that they usually continue to work well in class and are successful in doing that which the teacher asks to a high degree of teacher satisfaction. However, in spite of all of the data that are used, there are those who wonder how this or that student can be called gifted. In addition, "everyone" knows of other students - not identified as gifted - who are "better" than some so identified.

If we can accept that "some" identified gifted students are also gifted learners, then some of the myths, misconceptions, and frustrations may be alleviated. Also, the characteristics that are found in the literature and in this booklet can then be considered "accurate" rather than theoretical. The following criteria or standards are offered to differentiate between gifted **STUDENTS** and gifted **LEARNERS**. They are, of course, related to the characteristics of gifted learners listed above, but expressed to facilitate identification. It is for gifted learners, not for all those identified as gifted by some testing, that the strategies in this book are intended.

The gifted learner usually

- is the student that almost everyone would identify as being gifted without having to resort to looking at IQ test results
- produces things that are consistently (not always) unique, have some originality, and are interesting
- demonstrates a love of learning by consistently exploring more deeply or more broadly than required by the text, curriculum, or the teacher
- shows an intense interest in a topic or project and so becomes an expert knowledge-acquirer, continuing to pursue and add knowledge in one or more areas

- wants to understand the "why" of things; is not satisfied with gaining knowledge that is already known, but using knowledge to generate new knowledge, new or extended ideas, new or combined products, or finding new applications for existing knowledge
- is consistently (not always) productive
- is intrinsically motivated, does not have to wait to be told what to do next
- demonstrates promising abilities in regard to planning, organization, presentation, and evaluative skills
- is recognized as a leader.

Basic Beliefs About the Education of Gifted Learners

A number of basic perceptions or beliefs concerning gifted learners and their education have affected the development of this book. The major ones are noted here.

- There should be a continuum of provisions for the gifted, K-12.
- Gifted learners (not just students identified as gifted) may need educational differentiation in one or more of the following: curriculum, resources used, methods of evaluation, instructional methods, administrative organization, scheduling.
- All educators responsible for gifted learners have a professional and ethical responsibility to become knowledgeable about them as persons and their educational needs.
- Appropriate educational placement means finding out what the student knows and can do, and then adjusting the instructional or assignment level.
- Educational provisions for the gifted that are based on concrete data gathered from standardized achievement and diagnostic instruments, teacher observation of production in the classroom, and the quality of the student's work and products should not be called "special" or "elitist." They should be seen as appropriate to the needs of the student.
- Meeting the provisions of the law or mandate is a subset of doing that which is educationally sound and necessary in providing for identified needs of gifted learners. The law or mandate may be recent, but the needs have always been there. Laws and mandates often come into being because people are not doing that which is needed and appropriate.
- A variety of organizational, administrative, curricular, and instructional practices and provisions is necessary in order to provide for the range of interests, abilities, and goals of gifted learners.
- Teachers of the gifted should have the following special characteristics: being themselves a gifted learner, interest in the gifted, experience with gifted learners in assigned teaching duties, and a variety of educational and cultural experiences.
- The higher the students' demonstrated giftedness, the more alternative strategies should be available.
- The school district must recognize that, while schooling provides a major part of the gifted learner's education, there are many other individuals and groups that can also make valuable contributions. Some of these include: family; civic, social, and community agencies; private educational agencies; church; mentors; other students; the environment; governmental agencies.
- The district must have anticipated goals and objectives for the education of the gifted so that all of those in the district who have responsibility for the education of the gifted can demonstrate their contributions in working toward the accomplishment of those goals and objectives.

Prerequisites to Successful Implementation

In order for any of the strategies outlined herein to have the greatest chance for success, the following prerequisite actions are essential on the part of the school.

- Select those teachers for gifted learners who show motivation, experience, and competence.
- Make a commitment to provide the necessary supportive services.
- Provide sufficient lead time for teacher study and planning and provide in-service in any of the following ways: consultant services, visitations, conference attendance, professional library materials, monetary support for further formal education.

A successful program for gifted learners will provide them with the feeling that their giftedness and talents are recognized and valued, that their learning styles are included in the instructional planning, and that they have some autonomy and responsibility for establishing some of their educational goals.

Part A

Curriculum Strategies

Organization of the Strategy Descriptions

Each strategy selected for this book is described in terms of strategy title, the characteristics of gifted learners which are served by the strategy, how to implement the strategy, what the strategy accomplishes, and variation to be considered. Each of these descriptions is discussed below.

STRATEGY:

The strategies listed are those practices promoted in the literature and successfully practiced in districts across the country. They should be looked upon as a whole, rather than as individual strategies that will constitute the best or only way to provide for gifted learners. Some may be used in conjunction with others at the same level or grade. Some, however, may not work together if employed at the same time in the same grade or course. No individual teacher or even a district will use all or even most of these suggested strategies. They are alternatives to be used in combinations that work best under local conditions. Most teachers will only use a few of the strategies during any given time period.

CHARACTERISTICS SERVED:

The characteristics listed in this section are selected from a master list compiled from dozens of professional texts and hundreds of articles written about the education of the gifted. The master list appears in the appendix. The statement of characteristics is tailored to the strategy being described.

HOW TO DO IT:

This section is intended to provide a bare-bones outline about how to get started in implementing the strategy. In-service often is desirable to flesh out the steps and procedures of the strategy from regional service agencies, consultants, and the writing of the experts in the field. (See appendix for names).

WHAT IT ACCOMPLISHES:

This section is intended to demonstrate the real values of using a particular strategy - in some cases to the teacher, as well as to the gifted learner. It outlines the outcomes that the given strategy promotes and/or makes possible.

VARIATIONS:

This section includes extensions of the strategy, or presents alternative methods of implementing the strategy. This section should be considered as an idea starter since any objective has more than one path to accomplishment.

STRATEGY:

Permit early admission.

CHARACTERISTICS SERVED:

Gifted children learn things earlier than others, including the ability to read and to understand number concepts.
Gifted learners demonstrate advanced levels of comprehension.
Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.
Gifted learners prefer to be with older students because the older students are closer to their mental age.
Gifted learners have a large and advanced listening and speaking vocabulary.

HOW TO DO IT:

(Note: The evidence and research findings overwhelmingly support this strategy only when the social, mental, and psychological maturity of the child warrants.)

Develop a policy that explains the criteria for admission. Some starter suggestions are:

- Announce the policy and criteria to parents.
- Parents could be responsible for the individual's testing since the child is not yet enrolled. (District option)
- Child shows evidence of reading or beginning reading, has had a successful group experience for at least one year, has a large vocabulary, shows evidence of some number sense, and shows evidence of social maturity.

Use mental age, not chronological age, results from an individual IQ test.

- M.A. must be 6.0 for admission to kindergarten.
- M.A. must be 7.0 for admission to first grade.

Assign the child to a teacher who has no biases toward early admission.
Monitor progress carefully for the first six weeks.

WHAT IT ACCOMPLISHES:

It is a form of acceleration.
It provides for those students who are ready for academic work under the tutelage of a certificated person.
It places the students in with others who are closer in mental age.
It puts the child in the place where the most educational resources are—the school.

(Note: Even with this type of strategy, further acceleration may be needed later with very highly productive students, whether in regard to subject or grade.)

VARIATIONS:

See grade level/subject area acceleration on Pages 8, 9 and 20.

STRATEGY:

Cluster the gifted learners at grade or instructional level .

CHARACTERISTICS SERVED:

Gifted learners provide educational challenges for each other; they need the interaction with their mental-aged peers.
Gifted learners learn more in a shorter period of time and with less practice.
Gifted learners have advanced verbal and reasoning abilities.
The interests of gifted learners are more varied and advanced than their chronological-aged peers.
Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.

HOW TO DO IT:

The students are assigned to one teacher at each grade level who (l) has expressed a desire to teach the gifted; (2) is creative or gifted him/herself; and (3) has evidenced some study about the characteristics and education of the gifted.
The teacher is given the flexibility to deviate from the basic curriculum.
The teacher is given support through in-service opportunities and planning time for instruction and curriculum development.

WHAT IT ACCOMPLISHES:

Gifted learners' academic learning is not held back by the pace of a more heterogeneous class.
It provides time with mental-aged peers for intellectual stimulation.
The teacher can advance the pace of instruction, go into more depth or breadth, and increase the level of complexity of the learning.
Leadership by other students will be enabled to emerge in the other classrooms.
The learner can go beyond the regular curriculum, or a special curriculum and/or resources can be used.
It enables gifted learners to be placed with those teachers who want to and are able to work with the gifted.
It will reduce the need to in-service all teachers in regard to the education of the gifted.
Gifted learners are with a teacher who wants to teach them and who is chosen because of his/her particular skills for creating a rich environment and appropriate learning situations.
This organizational pattern reduces the need to have duplicates of additional resources needed, and thus makes the most efficient use of purchasing economics.
Gifted learners can explore different, unusual ideas and media without losing group acceptance.
This strategy enables a student to proceed through the curriculum at a faster pace, or with an increased depth or breadth.

VARIATIONS:

This clustering can be done on a subject area, special class, resource room or intergrade, multi-age-level basis.

STRATEGY:

Allow gifted learners to test out of a skill area (e.g., mathematics, spelling, grammar, reading, or library skills).

CHARACTERISTICS SERVED:

Gifted learners learn things at an earlier age than other students because of their self-initiative and intrinsic motivation.

Gifted learners' initiative, their ability to see relationships, and their curiosity lead them to learn more advanced material without formal instruction, thereby accelerating themselves in regard to the curriculum of the school and their own curricular pursuits.

Gifted learners demonstrate advanced levels of comprehension.

Gifted learners have a highly developed retention and recall system along with a long attention span.

Gifted learners are highly independent learners and have a wide range of interests. They are curious. Therefore, they learn many things on their own before, and in addition to that which they are taught in school.

Gifted learners often prefer to work on their own rather than being taught by an authority.

HOW TO DO IT:

This may be done on a unit basis, several units basis, a report period, or for a semester or a year.

Teacher-made tests may be used.

Chapter-end tests can be used for testing out on a unit basis.

Standardized achievement tests can be used.

Diagnostic tests from commercial developers can be used for appropriate placement (a form of acceleration) which is like testing out.

Existing semester or year-end finals may be used. These tests must be based on the written objectives in the existing curriculum.

Hopefully, the tests will be more concept-oriented rather than specific fact-based.

Students must have prior access to the written course objectives and the other resource materials prior to the testing.

WHAT IT ACCOMPLISHES:

It reduces the chances of gifted learners having to spend time being instructed in knowledge or skills that they already have.

Pretesting is a recommended instructional strategy.

Instruction will be more specific to the student's needs.

Pretesting aids in appropriate placement. It recognizes the learner's formal and informal learning.

It reduces the chances of boredom.

It provides incentive for gifted learners to work ahead.

Testing out enables gifted learners to take other advanced courses.

It can provide opportunities for the students to engage in studies not included in the regular curriculum, including such areas as: accelerated work, special projects, extension of classroom work, enrichment activities, field experiences, and extended library opportunities.

VARIATIONS:

This strategy can be used on a weekly, unit, report period, semester or whole year basis.

STRATEGY:

Allow gifted learners to test out of a content area (e.g., social studies, science, or health courses).

CHARACTERISTICS SERVED:

Gifted learners are avid readers and often engage in in-depth studies in areas of their interest that coincide with school-based subjects, in whole or in part. Thus, they often have more or more advanced knowledge than is required by either the text, the teacher, or the planned course (curriculum) objectives.

Gifted learners learn things at an earlier age than other students because of their self-initiative and intrinsic motivation.

Gifted learners' initiative, their ability to see relationships, and their curiosity lead them to learn more advanced material without formal instruction, thereby accelerating themselves in regard to the curriculum of the school and their own curricular pursuits.

Gifted learners demonstrate advanced levels of comprehension.

Gifted learners have a highly developed retention and recall system along with a long attention span.

Gifted learners are highly independent learners and have a wide range of interests. They are curious. Therefore, they learn many things on their own before, and in addition to that which they are taught in school.

Gifted learners often prefer to work on their own rather than being taught by an authority.

HOW TO DO IT:

Teacher-made pretests based on the written course objectives can be used.

Enable gifted learners to opt for taking the final exam at scheduled times during the school year. This presupposes that the students have access to the written course objectives for which they are to be held accountable and the resources that the teacher uses.

The tests should be based on concepts, generalizations, laws, and principles, rather than questions simply calling for factual answers.

WHAT IT ACCOMPLISHES:

It takes into account that which the learner already knows.

It reduces student boredom in having to sit through lessons already known.

It can enable the gifted learner to pursue extended learning on a given topic.

The use of this strategy promotes and maintains a student's learning initiative.

It can enable students to enroll in other courses.

It is a form of acceleration.

VARIATIONS:

This can be provided for on a unit, report period, semester, or yearly basis.

STRATEGY:

Permit grade acceleration.

CHARACTERISTICS SERVED:

Gifted learners learn things at an earlier age than other students.
Gifted learners learn more in a shorter period of time than other students and with less practice.
Gifted learners demonstrate advanced levels of comprehension.
Gifted learners have a large and advanced listening, speaking, writing, and reading vocabulary.
Gifted learners prefer to be with older students who are closer to their mental age.
Gifted learners adapt readily to new situations.

HOW TO DO IT:

(Research indicates that academic acceleration of up to two years over the course of the elementary and secondary years does not prove to be detrimental - all other factors [physical, social, and emotional] taken into account.)

Use achievement test results to show that the students' scores far exceed chronological grade level placement.
Use diagnostic tests in the skill areas to determine appropriate grade placement.
Use student performance level to gauge student ability.
Only accelerate one grade level (or one year) at a time.
Some suggested criteria are that the student:

- demonstrates a very large and advanced vocabulary
- demonstrates knowledge and ability to do math at least two years above grade level
- can easily read the content area texts of the next grade level(s)
- shows evidence of social maturity such as preference for being with older children when at play or other open situations where children are not restricted to chronologically aged peers
- handles stress and frustration well.

This acceleration is best done at the beginning of the year unless there are unusual circumstances.
The decision must be a joint one including school personnel, parents, and the child. School procedures should provide for either the school personnel or the parents to be able to initiate the request.

WHAT IT ACCOMPLISHES:

Shows that the school recognizes and values the gifted learner's demonstrated ability by making the appropriate school placement adjustments.
Increases the possibility that the learner will be challenged academically.

VARIATIONS:

Acceleration can be made in the existing grade assigned by individualizing the student's assignments based on pretests in the skill areas and presurveys in the content areas.
Tutorial assistance can be provided by school personnel.

STRATEGY:

Provide for a gifted learner who has a long-term intense interest and expertise in an area.

CHARACTERISTICS SERVED:

Many gifted learners engage in long-term studies on their own and thus develop a high level of knowledge and expertise in one or more areas.

Gifted learners interact well with older students and adults.

(See testing out characteristics on Pages 18 and 19).

HOW TO DO IT:

A gifted learner's special intense interest and/or area of expertise is being studied at a higher level class. The student is assigned to that class for that unit of work or longer.

This can be accommodated within the school at a higher grade level, within the district, or in nearby districts and other educational institutions or agencies.

Sometimes this can be accomplished by knowledge of the speakers, workshops, seminars, and other types of presentations or studies that are going on in the school or surrounding schools or in the community at large.

Gifted learners such as these should be provided higher level materials, technical materials, and/or primary sources and access to older students and adults who have expertise in the area(s) of their advanced learning.

WHAT IT ACCOMPLISHES:

The gifted learner's intense interest is served.

It continues to promote the motivation and initiative of the student.

No additional preparation is necessary on the part of the teacher.

It enables students to be in contact with others who have the same interest or advanced expertise.

It provides continuing learning opportunities in ways that may not be available or possible in his/her classes or school.

VARIATIONS:

Variations include acceleration, independent study, mentorships, apprenticeships, tutorials

STRATEGY:

Provide multi-age grouping or cross grade level grouping.

CHARACTERISTICS SERVED:

Mental age grouping is more important in this case rather than chronological age grouping.

Gifted learners provide educational challenges for each other; they need the interaction with their mental-aged peers.

Gifted learners learn more in a shorter period of time and with less practice.

Gifted learners have advanced verbal and reasoning abilities.

The interests of gifted learners are more varied and advanced than their chronological-aged peers.

Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.

HOW TO DO IT:

This is especially appropriate for small schools or for those with a small gifted population.

Begin combining gifted learners in two grade levels as early as second and third grade based on achievement and diagnostic pretests in the skill areas plus demonstrated productivity.

Combine gifted learners in two or three grades in the middle or junior high or high school level.

Treat them as one group using a roll-over curriculum. Procedure: During the first year for the placement in the skill areas (e.g. reading, math, spelling, and grammar), students are grouped according to demonstrated ability via classwork, diagnostic testing, and/or text or commercial pretests.

During the first year in the content areas, the text and curriculum of the higher grade are used since neither age group will have studied them. During the second year, the district will choose to go to the next grade level materials or return to the grade materials missed.

WHAT IT ACCOMPLISHES:

It is a different form of acceleration.

It permits advanced work to take place in regard to type and level.

It reduces the number of teachers who have to work with the gifted, thereby reducing the need for in-service for many teachers.

Clustering provides the teachers with a "group" to work with.

VARIATIONS:

Multi-age or cross grade level grouping can take place in single or multiple subject areas as well as by all subject areas.

See scheduling an open class period on Page 24 and open enrollment on Page25

STRATEGY:

Organize academic fairs.

CHARACTERISTICS SERVED:

Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners have a high degree of self-initiative and intrinsic motivation.
Gifted learners are creative in many areas of endeavor. They show much imagination.
Gifted learners enjoy intellectual challenges, learning new things and ways to go about them.
Gifted learners are fluent and flexible thinkers, being able to use many different alternative approaches to problem solving.
Gifted learners are highly independent and like to work alone at times.

HOW TO DO IT:

Science fairs are the most common. Other types to be considered are:

- Composition Fairs - poetry, booklets, stories, editorials, jokes, fables
- Computer Fairs - student produced programs
- Math Fairs - problem solving situations
- Health Fairs - projects dealing with the health issues of the day, or the promotion of good health
- Invention Fairs - student inventions (products, processes, games, research papers, new ideas)
- Arts Fairs - student projects, demonstrations, skits, readings, talent productions, song writing, photography, dramatizations
- Physical education contests and demonstrations
- Practical Arts Fairs - student products made in or out of school

WHAT IT ACCOMPLISHED:

There is increased opportunity for students to showcase their talents and expertise in a variety of areas.
It demonstrates that the district values talent and expertise in all areas.
It provides motivation and incentives for the students.
It is good PR for the school and community.
It provides a real outlet for student work.
It provides an additional outlet for students who are interested in particular careers or areas.
It provides for in-depth exploration and production.
It provides a variety of competitions of a group or individual nature and therefore, opportunities for more students to achieve honors.

VARIATIONS:

These can be held for grade levels, clubs, school-wide, or for community or civic groups. These can be combined during any given time period.
Hold a Student Conference and Expo.

STRATEGY:

Have a scheduled open class period for gifted learners (secondary).

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners are able to generate original ideas and solutions.
Gifted learners can become adept at self-evaluation with guidance.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to follow through in work that excites them.
Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.
Gifted learners are creative in many areas of endeavor.
Gifted learners have a well developed problem-finding ability.
Gifted learners have highly developed verbal and reasoning abilities.
Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.
Gifted learners have a high desire to learn.
Gifted learners display considerable drive to accomplish their goals, and have a high degree of concentration.
Gifted learners enjoy challenges, learning new things, and new ways of doing things.

HOW TO DO IT:

This would be substituted for the class in the area that they chose to work in. For example, a student choosing a science-based study would not have to have the regular science class.
Admission criteria should be set up by the faculty and administration.
A class period, or class periods, can be scheduled that is open to gifted learners in any grade to enroll and submit an individual or joint proposal for an independent study in an academic area of their interest. If the study is approved by a teacher committee, then the student is excused from the course in that area.
Credit is awarded based on pre-established criteria for the product produced by the student.

WHAT THIS ACCOMPLISHES:

This strategy rewards initiative and takes advantage of the learner's interests, abilities, and motivation.
This practice enables the learners to engage in a broad or in-depth study not usually possible in the regular classroom.
This is less disruptive administratively and instructionally than some other strategies.
Aside from mathematics (which is linear in content), there is no topical subject that is the single topic that has to be studied. The skills needed and practice can be gained through many vehicles rather than those prescribed by the text or curriculum guide.

VARIATIONS:

See open enrollment on Page 25 and independent study on Page 41.

STRATEGY:

Permit open enrollment (middle and secondary).

CHARACTERISTICS SERVED:

Gifted learners learn things at an earlier age than other students.
Gifted learners learn things more quickly than others.
Gifted learners have advanced reading skills.
Gifted learners get along well with older students.
Gifted learners demonstrate initiative and their curiosity leads them to learn more advanced (or a greater quantity of) content and skills.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to engage in works and studies that excite them.
Gifted learners adapt readily to new situations.
Gifted learners demonstrate a high degree of perseverance and a long attention span in areas that interest them.

HOW TO DO IT:

Students are allowed to apply for admission to any course for which they can demonstrate entry level ability gathered in or out of school.
Textbooks and course objectives of the next grades should be available for student study prior to the time when their course selection is to be made so that they make comparisons and evaluations in regard to their knowledge and skills.
Electives in the basic areas (English, social studies, science, math) would be considered the equal of required courses for the purpose of open enrollment.

WHAT IT ACCOMPLISHES:

It involves students in self-evaluation and decision-making.
It gives students some autonomy over their education.
It breaks down grade level barriers.
Courses in the content areas do not require a certain chronological age for success.
Most courses in the content areas are not necessarily prerequisites for the next course nor is there any educational basis for any certain order.
Administrative and other past practices will not be impediments to the learner's readiness to do advanced work or to participate in courses assigned to upper grade levels.
Involving learners in these decisions increases their motivation.
Gifted learners would probably be with more of their mental age mates.
It gives students a wider selection in area of interest and/or area of expertise.
It rewards self-study and/or learning pursued outside or in addition to that which is learned in school.

VARIATIONS:

Use a "free school" concept during one month between semesters when students, teachers, and community persons could conduct classes in their area of interest and expertise.

STRATEGY:

Assign gifted learners for multiple periods.

CHARACTERISTICS SERVED:

Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to engage in works and studies that excite them.
Gifted learners adapt readily to new situations.
Gifted learners demonstrate a high degree of perseverance and a long attention span in areas that interest them.

HOW TO DO IT:

There is nothing instructionally that dictates specific subjects daily. With the exception of mathematics and perhaps foreign language, no other subjects call for the same type of linear instruction and/or enrollment every semester.
Assigning gifted learners to double periods allows for in-depth instruction and learning. An example of an implementation in 7th grade is:

- lst semester - double periods of science (no social studies)
- 2nd semester - double periods of social studies (no science)
- lst semester - double periods of literature
- 2nd semester - double periods of areas such as health, P.E., the arts.

WHAT IT ACCOMPLISHES:

This strategy allows for more intensive learning.
It allows for more depth of study/discussions.
It allows time for local field experiences, laboratory or project work, and more study/research in the library.
It allows for more time with outside resource people.
It dispels the idea that learning time is only 40 minutes long. Sports teams do not become winners by practicing 40 minutes a day. Neither do academically gifted learners.
It allows for more time to develop higher level thinking skills.
It reduces the students' academic load in regard to range of subjects during any given semester.
This alternative does not call for additional staff.

VARIATIONS:

An extended-time summer program may be offered for credit.

STRATEGY:

Create a school within a school.

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners have a well-developed problem-finding ability.
Gifted learners have a wide range of heterogeneity in their abilities.
Gifted learners are creative in many areas of endeavor.
Gifted learners have a high desire to learn.
Gifted learners have the ability to elaborate, and the ability to produce new processes, ideas, responses, or other embellishments to a basic idea, situation, or problem.
Gifted learners enjoy challenges, learning new things and ways of doing things.
Gifted learners display a questioning attitude and seek information for the sake of having it as well as for its instrumental value.

HOW TO DO IT:

In the elementary school, cluster the gifted learners in one room in the school and allow the teacher the freedom to develop differentiated planned courses.
In small elementary schools create a one-room school atmosphere by clustering students from different grades to form a class.
In the secondary schools provide differentiations in:

- scheduling rather than the usual daily class type
- curricula
- teaching techniques
- faculty organization.

Criteria for admission to this program would be established.

WHAT IT ACCOMPLISHES:

Gifted learners are not held back academically by being in a more heterogeneous group situation.
Teachers can be given more academic freedom to design instructional opportunities beyond the basic curriculum.
There can be more opportunities to take advantage of the learners' interests and abilities through personalizing assignments.
It demonstrates that the school values those with demonstrated interests in learning.
The use of this strategy will allow for higher standards to be set and maintained.
Advanced level texts can be used as basic resources.

VARIATIONS:

See clustering on Page 17 and advanced courses on Page 34.

STRATEGY:

Provide students with heavy academic schedules time in their area of visual and performing arts (secondary).

CHARACTERISTICS SERVED:

Gifted learners are able to generate original or unique products and ideas.
Many gifted learners are creative.
Gifted learners have highly developed imaginations.

HOW TO DO IT:

Make it possible for the gifted learners in the secondary grades who are talented in the visual/performing arts to have regular opportunities to work with teachers in those areas. Many talented students who are academically gifted cannot fit any fine or practical arts classes into their schedules.
Let learners contract for their physical educational objectives to be accomplished outside of school on their own time.
Let learners contract for an amount of released time in any class to free themselves for an arts experience.
Allow some periods per year for the arts instruction to be used at their discretion and with the approval of both the arts and the regularly assigned teacher for that time period.

WHAT IT ACCOMPLISHES:

It allows students to have contact with the art teachers. School is where the students can get professional guidance for their growth.
Students with gifts in these areas will recognize that the arts and their talents are valued by the school.
It provides balance to their lives.
It provides growth in their talent area in the same manner that the academics do in their gifted areas.
It promotes right brain growth.
It provides for the development of their creative potential.

VARIATIONS:

Provide for mentorships/apprenticeships with local artists, art leagues, or institutions.
Have sunrise/sunset courses before/after school.
Develop artist-in-residence partnerships.
Use offset schedules to enable gifted learners to enroll in an additional class.
Schedule regular or intensive classes in the summer.
Have evening classes.

STRATEGY:

Have a college-type schedule for gifted learners.

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners have a large and advanced vocabulary.
Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners see direct and novel relationships between known and new incoming information.
Gifted learners are able to generate original ideas and solutions.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to follow through in work that excites them.
Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.
Gifted learners have highly developed verbal and reasoning abilities.
Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.
Gifted learners have a high desire to learn.
Gifted learners have a highly developed retention and recall system accompanied with a long attention span.
Gifted learners display a questioning attitude and seek information for the sake of having it as much for its instrumental value.
Gifted learners are willing to examine the unusual and are highly inquisitive.

HOW TO DO IT:

There is usually nothing in states' laws that mandates that a student's time must be spent in the same place or with the same person every day.
Use a 3-day/2-day plan (or vice versa): three days for classes and two days for additional library time, tutorial help, project work, small group work (e.g., planning, discussions, lab work, etc.)
Establish alternative sections of classes for those students who are highly independent and who are also self-motivated.

WHAT IT ACCOMPLISHES:

It frees the teacher for tutorial periods each week.
This strategy puts more responsibility on the learners for their own learning.
It shows that extensive reading and increased/in-depth study is valued.
It allows for more time in the library than is usually possible to get in an academic schedule.
Class discussions can have more depth and/or breadth and be conducted at a higher level.

VARIATIONS:

See seminar approach to scheduled classes on Page 37.

STRATEGY:

Use correspondence courses for credit.

CHARACTERISTICS SERVED:

Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.
Gifted learners display considerable drive to accomplish their goals. They have a high degree of concentration.
Gifted learners enjoy challenges in regard to learning new things.
Gifted learners have a need for freedom and individuality in study.
Gifted learners are fluent and flexible thinkers, being able to use many different alternative approaches to problem solving.
Gifted learners are highly independent learners and often prefer to learn on their own rather than in a directed learning situation.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.

HOW TO DO IT:

Use when any of the following conditions exist:

- The course is not available in the school or in a nearby school.
- The course is more advanced than those offered in the school.
- The course is based on the student's proven need.
- The student has completed all that the school has to offer in an area.

Use the list of approved agencies and their courses from the state department of education.
Assign a teacher-monitor.
The district usually pays for the materials.

WHAT IT ACCOMPLISHES:

It can provide for a learner's intense interest and special ability.
It can provide for acceleration when advanced courses in an area are not available.
It can provide enrichment for the basic courses of study.

VARIATIONS:

Use computer assisted instruction, programmed learning, learning activity packages, tutorials, college enrollment, college external study programs.

STRATEGY:

Provide for college enrollment, part or full time.

CHARACTERISTICS SERVED:

Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.
Gifted learners display considerable drive to accomplish their goals. They have a high degree of concentration.
Gifted learners enjoy challenges in regard to learning new things.
Gifted learners have a need for freedom and individuality in study.
Gifted learners are fluent and flexible thinkers, being able to use many different alternative approaches to problem solving.
Gifted learners are highly independent learners and often prefer to learn on their own rather than in a directed learning situation.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.

HOW TO DO IT:

Have the college professor conduct the course on the school district site before, during, or after school. (This may be by individual district or consortium contract or paid by the student.)
Use special outreach courses from local colleges and universities that require a district teacher-sponsor.
Summer, Saturday, or evening courses may be offered.
Television courses may be used. (Teleteaching program or broadcast).

WHAT IT ACCOMPLISHES:

Gifted learners are provided advanced courses commensurate with their ability.
The gifted learner is not penalized academically because the needed/desired course is not available in the home school.
The size of the district is not a deterent to providing for advanced students.
Districts with a small number of gifted learners can use this option when advanced courses cannot be offered.
Gifted learners have access to a library collection more suited to their ability.

VARIATIONS:

See correspondence courses on Page 30 and tutorials Page 44.

STRATEGY:

Award credit for outside-of-school educational experiences.

CHARACTERISTICS SERVED:

Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners display a questioning attitude and seek information for the sake of having it as much as for its instrumental value.
Gifted learners engage in a wide diversity of learning activities and opportunities beyond the school sponsored by civic, social, and other educational agencies.

HOW TO DO IT:

Establish a policy about which types of courses at which types of organizations and institutions may be considered for credit possibilities.
Set criteria for awarding credit.
Establish proposal form for preapproved credit requests.
Some demonstration of results of the lessons may be required or a certifying process of successful progress by the outside teacher or agency.

WHAT IT ACCOMPLISHES:

It encourages self-initiating students to engage in work beyond the regular school offerings.
It indicates to the students that learning outside of school is valued.
It recognizes that other educational agencies and experiences have value.
It allows for broader offerings in some cases.
It enlarges the scope of offerings in small districts, in particular.
It provides for students' interests and abilities that are not otherwise provided for in the school's curriculum.
It allows the student to take other courses in school.

VARIATIONS:

Awarding partial and cumulative credit, for example:

- When a student takes regular lessons in the arts outside of school, credit is given in art or music or physical education in the case of dance.
- When a student engages in an organized sport that holds regular practices, or private lessons in such areas as gymnastics or karate, credit is given for physical education.
- When a student enrolls in a private school or college after school or during the summer, credit is given in the area taken.
- When a student takes a foreign language (e.g., Hebrew school or Greek classes), credit is given in foreign language.
- When a student works after school or summers and has training such as might be offered in a business course, credit is given for business education.
- When a student successfully completes an approved correspondence course, credit is given in the particular subject area.
- When a student completes an adult education or other evening classes, appropriate credit is given.

STRATEGY:

Provide enrichment in the content areas.

CHARACTERISTICS SERVED:

Gifted learners are curious and have a wide variety of interests.
Gifted learners learn more in a shorter period of time.
Gifted learners are ready to learn advanced content at an earlier age than others.
Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners need little external motivation to follow through in work that excites them.
Gifted learners have a high degree of heterogeniety in regard to their abilities.
Gifted learners have the ability to elaborate, the ability to produce new steps, ideas, responses, or other embellishments to a basic idea, situation, or problem.
Gifted learners have a need for freedom and individuality in study.
Gifted learners are willing to examine the unusual and are highly inquisitive.

HOW TO DO IT:

(See Part B for ways to provide for the gifted in every subject area.)

WHAT IT ACCOMPLISHES:

The teacher is able to personalize any unit of work by capitalizing on the students' interests and abilities.
The results of the activities will bring variety to the study of any topic and classroom discussion.
Students will not be confined to the basic content and skills of the text and curriculum.
Student motivation will be higher because their interests and abilities will be taken into account in teacher planning.
These enrichment activities will broaden the scope of the manner in which the content is studied. Many aspects will be explored rather than all of the students having exactly the same assignments.
Use of this strategy recognizes and provides for individual differences.

VARIATIONS:

The ideas and activities are to be considered starter ideas; the teacher should add his/her own.
Opportunities should be provided for students to submit their own proposals. (See independent study on Page 41 and student proposals on Page 42.

STRATEGY:

Provide honors, advanced, or AP courses (secondary).

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners have a large and advanced vocabulary.
Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners have advanced verbal and reasoning abilities.
Gifted learners can learn things at an earlier age than other students.
Gifted learners enjoy challenges and learning new things and ways of doing things.
Gifted learners are better able to handle abstractions.

HOW TO DO IT:

The courses are differentiated in some of the following ways: objectives and expectations, content, source and resource materials, scheduling, teaching techniques, evaluation techniques, types of assignments.
These types of courses should be offered in all major content and skill areas.
The students select (with guidance) the number of the advanced courses that they can handle.
Consideration should be given to an adapted grading method that will recognize the fact that these courses call for advanced work.
There should be more access to the school's and other libraries.
There should be a major emphasis on the development of higher order thinking skills.

WHAT IT ACCOMPLISHES:

There is more of an academic challenge for the students.
Student abilities in all areas are addressed.
This practice demonstrates that the school values academic talent.
Students work to the level of expectations.
Pure memorization ability is secondary to higher level thinking.

VARIATIONS:

Provide for enrollment in other districts if advanced courses in the student's area of ability are not offered in the home school.
Use the "consortium" idea if individual districts cannot provide advanced courses. This means that one school can host the courses, or that different schools can become centers for different advanced subjects.
Bring college people on site.
Pennsylvania law allows a non-certificated college graduate or a person with special expertise to teach in the public schools up to 300 hours or one year if it is an emergency and if the person enrolls in a certification program.
If there are regional Resource Centers such as Intermediate Units in Pennsylvania, work with them to sponsor centrally located advanced programs.
Use college outreach programs.
See correspondence courses on Page 30 and college enrollment on Page 31.

STRATEGY:

Develop learning laboratories.

CHARACTERISTICS SERVED:

Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to follow through in work that excites them.
Gifted learners have a well developed problem-finding ability.
Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.
Gifted learners have the ability to elaborate, the ability to produce new processes, ideas, responses, or other embellishments to the basic idea, situation, or problem.
Gifted learners evidence interest and pleasure in intellectual pursuits.
Gifted students have a need for freedom and individuality in study.
Gifted learners are fluent and flexible thinkers, being able to use many different alternative approaches to problem solving.
Gifted learners are willing to examine the unusual.
Gifted learners often prefer to work on their own.

HOW TO DO IT:

Designate one or more spaces in the school as learning laboratories.
Identify materials that students would need to expand their learning in the basic subject areas. For example, in the social studies, some of the items might be:

- special maps (regular and relief) accompanied by how-to-read-map programs
- advanced texts (basic and reference)
- different types of globes
- project materials, including art supplies
- production equipment
- audio-visual materials and equipment, including a VCR and cameras.
- a computer with software related to the basic curriculum
- national magazines that are curriculum-related
- lists of community resources - places, material, and human.
- use of interlibrary loan system for needed sources

Similar lists would be compiled for the other areas.
Small work areas could be set aside in laboratories for individual and small group work.

WHAT IT ACCOMPLISHES:

There is an efficient use of funds since not all classrooms have to be so equipped.
The laboratory serves as a resource center for those who need advanced work, either assigned by the teacher or self-initiated.
It can also serve as a lending library for the whole school.
It fits in with Renzulli's "Revolving Door Model" in that as students have ideas or make proposals for special projects, there is a place for them to go to implement them.
It can be implemented with a combination of volunteers and aides.
It can serve as a small group work area for special projects or assignments.

VARIATIONS:

Use of the library if side rooms are available.

STRATEGY:

Develop interdisciplinary courses.

CHARACTERISTICS SERVED:

Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners see related and often unseemingly related relationships between known and new incoming information.
Gifted learners are interested in many thoughts, ideas, problems, and topics usually associated with older persons.
Gifted learners have a high degree of heterogeneity in regard to their abilities.
Gifted learners have the ability to elaborate, the ability to produce new processes, ideas, responses, or other embellishments to a basic idea, situation, or problem.
Gifted learners are fluent and flexible thinkers, being able to use many different alternative approaches to learning and problem solving.
Gifted learners have good organizational ability.

HOW TO DO IT:

Determine the subject area combinations desired. For example, a humanities program might involve any combination of the following: social studies, English, industrial arts/home economics, literature, art, and music.
Use double (or more) periods.
Teaching can be done by one teacher or a combination of teachers.
Use core themes, historical periods, ideas, societal problems, and other common areas as a basis of curriculum development.

WHAT IT ACCOMPLISHES:

Students see the relationships and contributions of the different disciplines.
Teachers become aware of the commonalities and uniquenesses of the subject areas.
Interdisciplinary courses provide for a wider variety of student interests and abilities.
The interdisciplinary approach allows a topic, subject, problem, or theme to be approached from multiple and diverse viewpoints.
The strategy breaks down the barriers and isolation of the subject areas.
The coordination of curriculum development, involving the collaboration of teachers from various subject areas during the writing time can provide a content and skill base that can demonstrate the interrelatedness of the various subjects.
Curricula developed in this manner will have the benefit of a variety of people's ideas and expertise regardless of whether it is individually or team taught.

VARIATIONS:

See multi-age grouping on Page 22, open class period on Page 24, multiple periods on Page 26, and seminar programs on Page 46.

STRATEGY:

Provide seminars/workshops as options in lieu of study halls.

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners are interested in many thoughts, ideas, societal problems, and topics usually associated with older students and adults.
Gifted learners are creative in many areas of endeavor.
Gifted learners have highly developed verbal and reasoning abilities.
Gifted learners have a high desire to learn.
Gifted learners enjoy challenges, learning new things, and new ways of doing things.

HOW TO DO IT:

Parent, teacher, administrator, lay person, or student-directed seminars/workshops are offered that students can elect to take instead of a study hall. These can be offered as many days per week or month as can be accommodated.
Proposals for seminars/workshops are solicited, school- and community-wide.
Teachers volunteer to teach something rather than monitor a study hall or have some other less-than-professional duty.
Issues of the school, student age group, and the society-at-large are held as forums using community, student, and school personnel as panel members. Audience participation is encouraged.
A calendar (at least monthly) should be established and announced.

WHAT IT ACCOMPLISHES:

Students have an opportunity to engage in learning without the grading situation.
People who volunteer have a chance to use their vocational or avocational expertise.
It involves more community people in the schools and the education of the students in their community.
Students with expertise in an area have opportunities to teach.
These activities are more beneficial educationally than many study halls are.
New and different areas can be explored in an informal setting. New avenues of exploration (hobbies, careers) can be opened.
Many gifted learners would rather be engaged in new or more learning than have a study hall; motivation is increased.
This might present another option for students to earn credits.
This strategy offers the opportunity for the students to learn new skills in workshop situations that are either not taught in the school or that receive little attention.
Students with special interests and/or abilities would be able to have contact with people who have expertise in that area.
New interests or new or advanced knowledges and skills might be generated.

VARIATIONS:

An audio/video library could be established either through purchase or by videotaping the seminars/workshops.
The A-V catalog of the district or the regional resource center could be opened to the students for their individual ordering to be used during their study hall times.
A communitywide speakers' bureau could be established and made known to the students as well as the faculty.
See open enrollment on Page 25, and learning laboratories on Page 35, and also enrollment in courses in lieu of study halls on Page 38.

STRATEGY:

Permit enrollment in other courses in lieu of study halls.

CHARACTERISTICS SERVED:

Gifted learners have unusually varied interests and have a high degree of curiosity.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners have a high desire to learn. They enjoy learning new things and new ways of doing things.
Gifted learners evidence interest and pleasure in intellectual pursuits.

HOW TO DO IT:

Students are made aware of the classes being held during the time that their study halls are scheduled.
The students select for credit or non-credit. (Overcrowding should be the only reason for a turn-down.) Regular attendance is a requirement. If elected for non-credit, tests, assignments, and projects are optional. If the non-credit student engages in these activities, the school will have to decide what the teacher's obligations are in regard to evaluation of the products.
More than an acceptable number of absences may be one criterion for cancellation of the option.
Another criterion may be that one incident that calls for disciplinary action in the course is cause for withdrawal of the option.

WHAT IT ACCOMPLISHES:

The students can broaden their scope of knowledge in a non-threatening and/or informal manner.
It provides another method for providing for the students' interests and abilities.
It is a way of providing desired courses that are not otherwise possible.
It provides for those students who would rather be learning something new rather than having a study hall.
New interests or new skills and knowledges may be generated.

VARIATIONS:

See open enrollment on Page 25 and seminars/workshops on Page 37.

STRATEGY:

Telescope, compact, condense the curriculum.

CHARACTERISTICS SERVED:

Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners have a need for freedom and individuality in study.
Gifted learners evidence interest and pleasure in intellectual pursuits.
See characteristics in enrichment in the content areas on Page 33, learning laboratories on Page 35, and independent study on Page 41.

HOW TO DO IT:

School Level - Reduce the elementary by one year through acceleration. Condense the middle/junior high from three to two years. Condense the high school by one year.

Classroom Level - Condense the usual nine week report period content to fewer weeks. Use the remainder for independent study based on the topic of the base unit or some spin-off that relates to the students' interests. Have students begin their planning for independent study two to three weeks in advance. Use a proposal format. Students can work individually or in small groups. This provides time for the students and the teacher to identify resources and plan how they will conduct the study.

The emphasis in using this strategy is on concepts, generalizations, laws, and principles rather than facts. The facts, data, and information in the text and curriculum are to be treated as the vehicles by which to develop those larger, more permanently needed learnings.

WHAT IT ACCOMPLISHES:

The students still "cover" the same objectives and content of the planned course.
The content "covered" is reduced to essentials and the major ideas.
Students have the opportunity to explore topics in depth.
Students have additional practice in designing, conducting, and evaluating self-studies.
This method promotes independence and gives the students some autonomy over their education.
It allows for a pace commensurate with the students' abilities.
This strategy requires that the "lifetime learnings" (i.e. concepts, generalizations, laws and principles) have to be the focus rather than facts.
It can provide time for more access to the library.

VARIATIONS:

Condense a semester from 18 to fewer weeks to allow for independent study.
Condense a year into fewer weeks to provide for long-term independent study.
Condense a week into a four-day week to allow one day for pursuit of some depth of the week's work or a student interest. With a highly motivated group, this can be planned weekly, periodically, or in a cluster of four-day weeks on alternate months.
See characteristics in enrichment in the content areas on Page 33, learning laboratories on Page 35, and independent study on Page 41.

STRATEGY:

Develop learning activity packages.

CHARACTERISTICS SERVED:

Gifted learners sometimes learn better and more efficiently independently.
Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners are able to learn more in a shorter period of time than other students and with less practice.
Gifted learners have a need for freedom and individuality in study.
Gifted learners often prefer to learn alone or in concert with others of like interests.

HOW TO DO IT:

These are self-contained packages that (l) enable a student to work independently at their own pace, and (2) that constitute a mini-planned course (or portions of one) in that they have the following elements: objectives, materials needed, procedural directions, resources to be used, evaluation method and criteria.
Secure copies of the many models on the market.
Provide time for teachers, department chairs, and/or supervisors to write LAP's on a unit basis (l) either as a permissible substitute for the regular directed-teaching unit; or (2) as extensions of the regular work of the class; or (3) in areas not included in the regular curriculum. (NOTE: Areas included in l-3 may also be written at an advanced level.)
Students can be given a choice of whether they wish to learn in an independent mode or in a directed-teaching one.
As more units are designed, students will have more options of topics to be studied.

WHAT IT ACCOMPLISHES:

This strategy provides for the very highly independent learners in that the school recognizes and values that type of learning style.
Over the years the increasing numbers of LAP's developed will be available for acceleration, enrichment or both. They will also, by their number, provide for a wider range of interests and abilities.
It provides more student autonomy over the method and content of learning.
It provides a structured way for the students to go beyond the basic learning expected.
It provides an option for those students for whom the pace of the class is too slow or when the level of learning expected is too low.

VARIATIONS:

Some students may be allowed to design units for other students. The same degree of learning will take place plus having to use the skills of design, such as planning, organization of material, identification of resources, sequencing of activities, and evaluation procedures.

STRATEGY:

Utilize independent study or contracting.

CHARACTERISTICS SERVED:

Gifted learners have a great deal of learning independence.
Gifted learners like learning at their own pace.
Gifted learners can "cover" more in a shorter period of time.
Gifted learners are self-initiating, intrinsically motivated.
See characteristics on Page 36 for student proposals.

HOW TO DO IT:

This strategy is meant to be for teacher-assigned rather than student initiated projects.
The student is assigned or agrees to a topic for independent study.
The student is informed about the conditions and criteria that will be used to evaluate the proposal for approval.
The format for the proposal will be established. It will include, but not be limited to the following:

- why the independent study is being assigned - its value
- the objectives or anticipated outcomes - those knowledges to be gained and those skills that will be practiced
- the resources that will be used
- the methods that will be used
- the method of evaluation that will be employed and the criteria to be used
- the time-line to be followed

The teacher will, of course, have to provide some training in being able to complete the outline for the independent study.

WHAT IS ACCOMPLISHED:

Gifted learners have the opportunity to engage in studies of greater breadth/depth than the regular classroom may provide.
This strategy provides time for research.
It provides the time to use the tools of study in the various disciplines.
It gives the student practice in planning, organizing, implementing, and self-evaluation.
It gives the student an opportunity to work with more advanced and higher-level materials as well as a greater variety of resources.
It gives the student more autonomy in planning his/her education.
It uses student interests as proven motivators.
It enables the student to go beyond the courses offered by the district.
It gives the student practice in learning modes and methods of presentation.
It provides variety to the method of instruction and the learning itself.

VARIATIONS:

Computer assisted instruction, correspondence courses, tutorials, programmed learning materials, learning activity packages.
See open class period on Page 24.

REFERENCE:

The Allegheny I.U. (Pittsburgh, PA) Gifted and Talented Program has a planned course manual on independent study that is available for a nominal cost.
See characteristics on Page 36 for student proposals.

STRATEGY:

Permit gifted learners to submit proposals to supplant requirements.

CHARACTERISTICS SERVED:

Gifted learners are self-motivated, self-initiating, independent learners and have many good ideas.

Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.

(See characteristics in the following: independent study on Page 41, open enrollment on Page 25 and learning activity packages on Page 40.)

HOW TO DO IT:

Students are invited to submit proposals for an independent study that will supplant or supplement the unit to be studied. The teacher will have to provide training in proposal writing. The proposal format will include (but not be restricted to) the following:

- the topic or subject of the study
- the objectives (content and skills)
- the method to be used
- the resources to be used
- the method of evaluation and criteria to be used.

The student can be required to complete a study guide for the regular unit as an option.

The student proposal is assessed for approval based on criteria, such as:

- Is the topic or exploration of value?
- Are the objectives worthy and valid?
- Are the skills, competencies, processes and knowledges needed and to be used by the student at least equivalent to those needed in the subject area (not necessarily in regard to the topic of the regular unit.)

WHAT IT ACCOMPLISHES:

This strategy enables highly self-initiating students to have an opportunity to put their ideas into practice in place (school) where the resources are.

It avoids boredom in classes where the learning expectations may be too low.

It takes advantage of the students' intrinsic motivation.

Students develop self-planning skills, a life-skill need.

Students learn that their ideas are valued, that initiative is rewarded.

Students learn to think beyond the text and course objectives.

The learning results of the proposals usually go beyond the learning called for by the text or curriculum.

This strategy promotes scholarship.

Students progress toward being independent learners.

It gives students some autonomy over their education.

The progress in writing high quality proposals for study should be cumulative under continued guidance of teachers.

Proposal writing is a life skill with high use in business, industry, and education; it is a neglected skill development in the schools.

VARIATIONS:

Students can be permitted to submit proposals for chapters, units, report periods, or in a few outstanding cases, for a semester or year.

See characteristics in the following: independent study on Page 41, open enrollment on Page 25 and learning activity packages on Page 40.

STRATEGY:

Provide field experiences

CHARACTERISTICS SERVED:

Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.

Gifted learners have a keen sense of responsibility, conscientiousness, and perseverance.

Gifted learners display considerable drive to accomplish their goals.

Gifted learners enjoy challenges - in learning new things and ways of doing them.

HOW TO DO IT:

A policy is established that denotes the conditions and criteria that make it possible for individuals or small groups to engage in which type of field experience either at the school's initiation, the student's, and/or parent's. Procedures are outlined.

In the elementary school parents are informed that they can petition to take their child(ren) out of school for educational experiences that meet the conditions and criteria established.

In the secondary schools the students and parents are informed that students may be legally excused from school for outside educational activities, or that students may use up to X number of days per year for educational field experiences.

Teachers note individual intense interests and abilities and suggest appropriate educational field experiences to the administration and parents for school or parent implementation that are not available and that cannot be provided by the school.

WHAT IT ACCOMPLISHES:

This strategy recognizes and accepts the co-responsibility of parents in regard to providing other educational experiences.

The school shows that it recognizes the value of contributions of other individuals and agencies and experiences in addition to the education of the student in the school.

The reward (or award) of allowed days could be an incentive for improved learning.

Many valuable educational experiences occur outside of school during the school day that cannot be taken advantage of otherwise.

Other students can benefit vicariously from the direct experience of some students.

The field experiences for an individual or small group can often be provided at no cost to the district.

This allows students to have educational experiences that cannot be provided in or by the school whether to the same degree or at all.

Students have first-hand rather than vicarious experiences.

VARIATIONS:

These field experiences can take many forms. Some are:

- field trips (exploratory)
- mentorships or apprenticeships (long term working with experts in a particular field)
- internships or work-experience (long term on-the-job training).

STRATEGY:

Provide tutorials in the area of significant advanced learning.

CHARACTERISTICS SERVED:

The student for this strategy is usually extremely advanced academically, even more so than other gifted learners.
Gifted learners learn many things independently and in many cases much beyond that which the text or curriculum requires in their areas of interest and ability.
Gifted learners demonstrate advanced levels of comprehension.
Gifted learners have an unusual capacity for retaining and processing information.
Gifted learners have a high degree of initiative and intrinsic motivation.
Gifted learners need little external motivation to follow through on work that excites them.
(See characteristics for independent study on Page 41, student proposals on Page 42, and field experiences - Page 43).

HOW TO DO IT:

Tutorials do not require instructional sessions five days a week for specific periods of time. Therefore, a teacher in the needed area can be given a tutorial assignment rather than another type of extra-duty assignment.
Department chairs, supervisors, and coordinators who have released time from classes may have some portion of their time assigned to tutorials.
Mentors from the community may be identified. This can include retired teachers.
If the session takes place before or after school, this can be handled via the extra pay for extra duty practice.
In states where the education of the gifted is considered formal special education, allocated funds may be used for this purpose.

WHAT IT ACCOMPLISHES:

This strategy provides for those few students who are so advanced that they cannot be provided for in the regular classroom.
It also provides for those elementary students who are very far advanced, but for whom placing them with very much older students would not be good socially.
It is the most efficient method for providing for extremely advanced students. These students are also usually highly independent learners.
It demonstrates that extreme cases of individual ability are recognized.
Sometimes this is the only way that the academic needs of this type of advanced student can be provided for.
This type of student is seriously handicapped if held to the work and pace of his/her chronological age group in his/her area(s) of advanced learning. Even courses developed for an advanced group are usually insufficient for this type of student.
Tutorials permit the student to work at his/her own pace.
This strategy also permits more breadth and/or depth than can be usually possible in a teacher-directed group situation.
There would be no restriction on the resource materials used.

VARIATIONS:

See field experience and mentorships on Page 43 & 45, independent study on Page 41, and student proposals on Page 42.

STRATEGY:

Utilize mentorships, apprenticeships and internships.

CHARACTERISTICS SERVED:

The learner may have an intense interest or high ability in an area that is not or cannot be provided in the school.
Gifted learners have a high degree of heterogeneity in regard to their abilities.
Gifted learners have a high desire to learn.
Gifted learners display considerable drive to accomplish their goals.
Gifted learners enjoy challenges in learning new things or new ways to do things.
Gifted learners display a questioning attitude and seek information for the sake of having it as much as for its instrumental value.
Gifted learners adapt readily to new situations.

HOW TO DO IT:

Survey local businesses, industries, civic associations, educational agencies, and laity in the community to identify the types of expertise that are available.
Match the results with students who have the same interests and who have shown initiative in pursuing that area of study. This can be vocationally or avocationally oriented.
Set up a schedule of meetings to determine the services (direct and indirect) that can be provided, as well as the procedures for access to and delivery of those services.

WHAT IT ACCOMPLISHES:

Students get to work with professionals who are earning their livelihood in the areas being considered by the students.
Students have direct contact with role or career models. This will serve to strengthen or reduce the students' interest in pursuing that area in a non-threatening manner.
Students have a real experience in their area of vocational and/or avocational interest.
This shows that the resources of the community are being recognized as important adjuncts to the work of the school.
Since not all students can have a direct experience, other students can benefit vicariously from those who do thorough reports and products.

VARIATIONS:

See independent study on Page 41 and tutorials on Page 44.

STRATEGY:

Change five-day-a-week courses to seminar-type programs.

CHARACTERISTICS SERVED:

Gifted learners demonstrate advanced levels of comprehension.
Gifted learners show unusually varied interests and have a high degree of curiosity. Their interests are often both eclectic and intensely focused.
Gifted learners need little external motivation to follow through in work that excites them.
Gifted learners have a high degree of heterogeneity in regard to their abilities.
Gifted learners have the ability to elaborate, the ability to produce new steps, ideas, responses, or other embellishments to a basic idea, situation, or problem.
Gifted learners have a need for freedom and individuality in study.
Gifted students have a high degree of initiative and intrinsic motivation.

HOW TO DO IT:

Seminar-type situations may be set up in one or more subject areas.
One method involves using two subject areas and then scheduling double sessions twice a week (2-3 for Subject A and 3-2 for Subject B on different days.) These are used for the discussion sessions.
The students are issued study guides and provided supplemental resources for study. The study guides suggest approaches to the topic as well as outlining suggested source materials and providing guide questions of a high level nature.

WHAT IT ACCOMPLISHES:

This strategy provides time for more in-depth study.
The teacher can plan for more higher level thinking in the seminars.
The student has time to use more and varied resources in preparing for the seminar.
This approach gives practice in becoming independent learners.
A greater variety of aspects of the topics can be studied.
Student contributions in class are based on their individualized pursuits rather than all students having the same knowledge from the same assignments and same materials.
Begun on a small scale at the early secondary grades in at least one content area, and increased in both the number of opportunities and classes, this strategy provides a good transitioning method from high school to college and beyond.
This strategy dispels the misconception that learning is 40 minutes long, or that the basic text is the end-all and be-all, or that it is even adequate for significant learning.
It provides an opportunity for the students to explore multiple or divergent points of view.
It helps students understand what scholarship means.
It acquaints the student with alternative organizational patterns for learning.

VARIATIONS:

The seminar-concept can be used for a unit of work, alternate or periodic units of work, for intervals of weeks, a report period, a semester depending on the independence and the educational maturity of the group.

STRATEGY:

Initiate club or interest group programs.

CHARACTERISTICS SERVED:

Gifted learners show unusually varied interest and curiosity.
Gifted learners are creative in many areas of endeavor.
Gifted learners demonstrate leadership qualities.
Gifted learners enjoy challenges in learning new things and new ways of doing things.
Gifted students display a questioning attitude and seek information for the sake of having it as well as for its instrumental value.
(See characteristics of telescoping on Page 39.)

HOW TO DO IT:

This could even be a period set aside weekly on one class.
Schedule times periodically, but regularly, during the school year when students of like interest can get together, or when individual students can pursue individual projects that are: (l) extensions of classwork; (2) advanced studies; or (3) those areas that are not offered as part of the regular program.
These clubs or interest groups can be conducted by anyone with leadership abilities and/or expertise in the area, including students, teachers, parents, lay people, or other school personnel.

WHAT IT ACCOMPLISHES:

Associative learning experiences enable students to share expertise.
This shows the students that the school recognizes the need to provide opportunities for student interest-based activities.
This strategy enables students with similar interests to get to know each other and possibly establish a network.
Having the opportunity to combine knowledge and skills with others allows all students to progress further.
This strategy provides for risk-taking opportunities in an informal relaxed setting.
This can aid in career explorations.
New ideas, interests or skills may be generated through this informal non-threatening approach.
This opportunity may lead to in-depth or new hobbies.
It provides opportunities for students to explore areas not possible in the regular school program.

VARIATIONS:

If regular periods cannot or are not scheduled, periods can be scheduled throughout the school year taking time from all areas on a equitable distributed basis.
This can also be scheduled before or after school.
See seminars on Page 37.

Part B

Teaching Strategies
by Subject Area

Organization of the Teaching Strategy Descriptions

This should be a growing collection of strategies wherein these initial suggestions can serve as a starter group for all classroom teachers. Hopefully, each teacher will, because of activities already being implemented or because of ideas yet to come, make a contribution to this booklet. Thereby a contribution will be made to other teachers and, most importantly, to the total betterment of program provisions for the gifted learners.

General (Any Subject) and specific subject area strategies are described in brief paragraph form. They are intended to be used in an interdisciplinary fashion. That is, teachers of a particular subject should consult the section for "Any Subject", their own subject, and related subjects for additional ideas. The chart below indicates common relationships among subject areas with regard to appropriate strategies.

Relevant Strategies / Subjects	Any Sub.	Art	Bus. Ed.	Drama	Driver Ed.	English	For. Lang.	Hth/Safety	Home Ec.	I.A.	Math	Music	Phys. Ed.	Reading	Science	Soc. St.
Any Subject	X															
Art	X	X		X								X				X
Business Education	X	X	X	X		X					X					
Drama	X	X		X		X						X				
Driver Education	X	X		X												
English	X	X		X		X	X							X		
Foreign Language	X	X		X		X	X		X			X				X
Health/Safety	X	X		X	X			X	X	X			X		X	X
Home Economics	X	X		X				X	X		X				X	
Industrial Arts	X	X						X		X					X	
Mathematics	X	X	X								X				X	
Music	X	X		X		X	X					X				X
Physical Education	X	X						X				X	X		X	
Reading	X	X	X			X								X		
Science	X	X		X				X	X	X	X				X	X
Social Studies	X	X	X			X						X			X	X

ANY SUBJECT:

This first list is generic in that the activities can occur in almost any subject area. Following lists will deal with specific subject areas.

Special Events - Use as kick-off activities or experiences. Holidays, visits by famous people, specific honors of the school, community, people, elections, political issues, sports, and cultural events usually are accompanied by many resources.

Student Hobbies or Avocations - Use hobbies to supplement class work in order to allow students to pursue them instead of class work that they already know. This indicates that the school values their initiative in engaging in those studies or activities.

Identification of Consultants - Let students suggest persons who can be used by the class or by themselves as individuals or in small groups. This involves using locational skills, preparing an interview form, conducting the interview, and planning for effective use of the consultant - all high level tasks.

Community Surveys - Let students conduct surveys on local, state, or national issues. This familiarizes students with constructing a survey form, the problems in getting information, the diversity in people, using sampling techniques, organizing data, and analyzing data.

Study Contracts - Use study contracts for gifted learners. This not only allows for independent study (individual or small group) but teaches the student to set realistic goals, select means to reach those goals, budget time, and also negotiate - an increasingly important interpersonal and intergroup skill.

Long Range Assignments - Implement for a week or a unit rather than on a day-to-day basis. This enables students to work at their own pace. If they choose to complete the assignment early, they can either go deeper into a related area that they are interested in, or work independently in an unrelated area or on special activities.

Research Projects - Use projects requiring critical and creative thinking, rather than just gathering a compilation of what others have said or done. This should be a taught skill and process.

Supplemental Topics, Themes, Problems and Activities - Make a note when you say to yourself, "I wish I had time to do that with this class." Don't just let it go. Allow a subgroup or an individual to work on it. This provides a uniqueness for students to supplement the work of the regular program.

Learning Guides - Develop them for those areas that you know gifted students have inquired about in the past. Think about this example - if each high school science teacher would make one learning guide a quarter, the department would have many learning guides at the end of one year - and a library full at the end of five years! What would be true in your department or grade?

Learning Packages, or Centers - Enables students to develop these based on their interests, hobbies, or classwork. Skills of planning, locating information, organizing information, setting-up, writing instructions, making worksheets, and evaluating are all involved.

Photography - Let students use still, video, and movie techniques - to supplement and support what is going on in class. Sequencing, organizing, planning, knowing the subject, composition, and creativity are some of the skills and talents involved. This also calls for assignments to be given at least two weeks ahead of time.

Variety of Assignment Options - Provide more variety in assignments. The farther ahead that assignments are made, the more variety that can be offered. This involves the skills of decision-making and follow-through. Of course, if options require gathering resources and/or using other settings, time should be provided. This is another reason why giving assignments on a longer range basis is almost a necessity.

Greater Use of Libraries - Make this possible not only for the school library and higher school libraries, but the community and university libraries, as well. Gifted learners are almost always bored by low level question-and-answer sessions based on commonly assigned material. They can be much more productive in another setting and will be able to make better contributions to the class. Locational skills and opportunities for more breadth or depth of study will be possible and also enrich the regular program.

Students as Teachers - There are probably many opportunities for students to be called on in their area of expertise by teachers in various departments. Also, assigning them to the teaching role can develop the skills of planning, study, organization, presentation, and self-evaluation.

Activity or Experience Idea Box - Provide in the subject(s) that you teach. Make a supply of cards available for students to write-up or design activities they have tried. This can serve as a resource for all students. An alternative would be to have an Idea Board. This is another way to demonstrate that student ideas and work are valued.

Seminars with Community Leaders - Set them up for students whose interest is matched with those types of leaders. Listening, notetaking, formulating questions, discussion techniques, and evaluation of content are some of the skills that can be developed.

Career Exploration - Enable students to examine possibilities in your subject area when their interests match your area, or if you think they would be an asset to your area. This type of search involves library, interview, and evaluation skills.

Assemblies, Speakers, and Programs - Keep track of all in the school and district that might match interests, needs, or abilities of students in your class.

Teacher In-Service or Staff Development Activities - Include more mature students when these activities are appropriate to the students' interests and abilities.

Problem Solving - Let students work on problems for you. Even classroom housekeeping problems are possibles (a new filing system, storage system, etc.) Planning, identifying the elements of the problem, designing and organizing are some of the skills involved.

Teachers' Manuals and Courses of Study - Let students use these materials. Many students can benefit as much from self-learning as other-directed learning. They will be able to see the total picture and thus be better able to see the relationships of the parts.

Teacher Areas of Expertise - Let students know about them so that they can use you as a resource.

Cooperative Learning and Reciprocal Teaching Opportunities - Take advantage of research results that working and learning in groups are more productive for learning than having to learn alone.

Also consult the following strategies in Part A:

- Use Correspondence Courses for Credit (p. 30)
- Provide Seminar/Workshop Options in Lieu of Study Halls (p. 37)
- Develop Learning Activity Packages (p. 40)
- Utilize Independent Study or Contracting (p. 41)
- Permit Gifted Learners to Submit Proposals to Supplant Requirements (p. 42)
- Utilize Mentorships, Apprenticeships, and Internships (p. 45)
- Initiate Club or Interest Group Programs (p. 47)

ART:

Most art experiences now provided for students as part of the basic curricula are highly personalized, enabling the students to (1) have a variety of experiences with a variety of media; and (2) at the same time to work toward full potential in particular media or modes of expression. The suggestions below are intended to supplement and support those fine aims. Each of the following can be ways in which gifted learners can be provided for in the art area.

Cartooning - Include comic strips, political and social commentaries, school issues, and personification cartoons. These deal not only with artistic ability but also with applying some of the higher forms of Bloom's taxonomy, such as translating and synthesizing.

Technical Artistry - This involves integrating artistic and technical ability with other areas such as social studies, science, health, and drama in making scale or full size models, explanatory drawings, or technical drawings. The planning, study of the original object, decisions about medium and format, and design skills are all brought into play.

Puppetry and Marionettes - Whether for the experience or for a performance, the skills of scale, construction, producing desired movement, manual dexterity, translation of character into the face and movement, and costuming are all employed. Set design enables another set of skills to be developed. The writing and oral interpretation needed also provide opportunities for using these skills.

Exhibits in Schools for Parents - This is an incentive-type experience not only to exhibit products, but also to exhibit skills being used in the processes.

Field Trips - These should be scheduled as the individual or small group needs arise, rather than having to wait to be shared as part of a class trip. Setting objectives, identifying possible places, setting priorities, making trip arrangements, making prior contact to be sure objectives can be met, setting criteria for evaluating the experience, and reporting back are a few of the skills that can be developed by a student planning an individual trip.

Opportunities to Observe Artists at Work in a Variety of Media - Students interested in particular media should have opportunities to spend time with individual artists to watch them at work. The skills of observation, question generation, and application are some involved. These observations can take place in school, in the artist's home or place of work, in museums, art festivals, or as an observer in an art school.

Layout, Design, and Illustration for School or District Newspapers - Also, students should be encouraged to submit work to local newspapers and other publishers as spots, cartoons, etc. This will lend a real purpose for their work.

Hobby Periods - These give students opportunities to share or show their in or out-of-school skills and talents. This not only shows that the work of the student is valued, but also may generate new interests on the part of others.

Murals and Paintings for Classrooms and Buildings (not only school buildings) - These provide another real outlet for student abilities. Design, use of scale, and organization are some of the skills practiced.

Media Presentations - Include the use of posters, film, pictures, slides, and collages accompanied by sound to create moods, state a position, or to make an informational presentation about topics, issues, problems, or themes. This presents opportunities for team planning, organizing, coordinating, and timing, as well as the individual or shared activities of writing, directing, filming, and decision-making about the presentation elements.

Studies of the Lives of Great Artists - Indepth studies through print and film develop background of the reasons for the artist's style, topics, and point of view. College and university libraries are better for this type of study. The students can better understand the artistic process itself, as well as the discipline it takes. This type of study can aid the highly creative in understanding themselves and their environment in this bibliotherapy-related approach. They can also be encouraged to correspond with living artists, who often are willing to communicate with aspiring artists.

Specialized Research Studies and Application of the Results - Includes activities such as research into the use of color to create emotions, or lines to depict particular motions. True research skills are developed through studies like this.

Studies of the History of Media - Research skills are involved here, also. Knowing the history of something may aid in making predictions about the future of that something. Predicting is a high level skill.

Classroom, School, or District Logo, Banner, Flag, or Symbol - Designing these involves studying the characteristics of the situation, acquiring knowledge about what constitutes an essential inclusion, interpreting what symbolism can or cannot communicate, and using color appropriately, to name a few skills that are involved. This is a real problem-centered situation.

BUSINESS EDUCATION:

Gifted learners are to be found in business courses and programs. These students have the potential to rise to supervisory, management, or executive positions because of their abilities. The suggestions below are offered to enhance the attainment of that potential.

Studies of the History of Machines, Inventions, or Processes Used in Business Education - This involves research skills, as well as familiarizing students with how some of these things came about. It may sharpen their awareness of needs that exist now. The changes and effects that any invention causes can be a profitable learning.

Creation of an Office or Business System to Solve a Specified Problem - Students can be assigned to study all aspects of the problem, determine what existing solutions there are, and then synthesize their ideas into a creative or novel approach.

Visits to Unique Offices - Going alone or in small groups helps develop the ability to set purposes, plan questions to be asked, sharpen observation skills, make comparisons, practice interpersonal relations with adults, and plan and present reports of visits.

Interviews with Business Persons Working in Different Capacities - Through construction of an interview form and conducting the interviews, the student will see the varying points of view of the same situation. This process will aid in developing the perception that issues or problems have many sides that must be considered.

Role Playing - Can be constructed based on real-life situations that arise in business. These activities can involve real problem-solving situations.

Short-Term Internships - This activity enables students to view a total operation so that they can see a business at work, realize the interdependence of business personnel and operations, and begin to formulate roles in which they are interested.

Management Problem Solving - These problems could be in regard to personnel, communications, office arrangements, work flow, or purchasing. The problem-solving practice provided in this strategy is valuable.

Study Contracts - Learning to ask questions about terminology and meaning of provisions sharpens thinking. Students become familiar with the scope of management - labor relations.

Contract Negotiations - The skills of negotiation are very important to learn. What are the procedures, processes, and rules under which negotiation takes place?

Business Forms - Developing forms and trying them out teaches attention to detail, determining what information is needed, what is essential, and how to get it in the most efficient format given a limited amount of space. This provides very good practice for critical thinking.

Issue Studies in Business and Industry - This could involve interviews, community surveys, and business surveys. It could involve studying the history of a problem or issue and past solutions. It could involve studying related issues and then practicing or proposing solutions that have a documented base. Having to examine both sides of an issue to determine common and different points of view can be an exercise in the art of compromise. This will deter either-or thinking.

DRAMA:

In general, it can be said that drama as an end to itself, or as a support for another end such as acting out a story or a scene from history, offers opportunities for gifted learners to express themselves many ways and to develop many skills. Basically, providing a variety of form, media, and roles opens avenues which students may be motivated to pursue further.

Engagement in or Exposure to a Variety of Drama Forms - These forms can include puppetry, drama, comedy, musicals, and pantomime which will appeal to the variety of interests in any group. Each calls for different skills and talents. Students will be able to see relationships and uniquenesses.

Exposure to a Variety of Media - This provides for a variety of talents both in applying various media and developing products of the media.

Exposure to a Variety of Roles - Includes viewing or doing the work of actors, writers, directors, managers, designers, and make-up. This enables the students to understand the contributions of each role and the cooperation necessary for a successful production.

Studies of Theater History or Actor's Biography - This can provide opportunities to develop research skills.

Theaters or Stage Settings Models - Making this involves the skills of scale, manual dexterity, and design.

Tapes or Records of Great Performers - Listening to these can involve evaluation, listening, and comparison-contrast skills.

Visits to Rehearsals and Productions - These can develop an appreciation for the work of the various people in their different roles.

Interviews with Performers - Interviewing skills include setting outcomes desired, designing questions, sequencing questions, conducting the interview, and reporting or analyzing the results of the interview.

Performing Group Experience - Being in live performances with the opportunity to discuss roles, approaches, and preparation activities enables students to understand the dimensions and background planning. Directions and questions before the presentation can aid in following the objectives, direction, and nuances of the performance.

DRIVER EDUCATION:

Almost all gifted learners enroll in the driver education program. There are provisions that can be made for them here, also.

Checklists for a Student Observer - Constructing and using such checklists can be used to develop powers of observation, skill in applying what is learned, organizational skills, and layout design.

Driving Flowcharts, Illustrations, Cartoons, Posters, Films, or Slide Shows - Students can make visuals about "how to's" or sequences of events in learning to operate a car. Other areas might be visuals of laws, rules, and regulations. These activities call for translation from one form of understanding to another.

Surveys of Traffic or Safety Problems - This activity involves setting criteria for what constitutes a traffic or safety problem area. It also involves map reading, organizing the search, determining the method of reporting, and deciding what action can be taken. Using their results with the local government officials makes it a real situation.

Charts and Graphs - Students can make charts and graphs about statistical data related to driver education. This involves study of statistics, learning various forms for presentation of statistics, and the high level skill of translating data into chart or graph form.

Traffic Flow Checks - Students can set these up in the in cooperation with the police. This activity involves all the skills of conducting a survey, plus opportunities to organize and analyze data.

Peer Teaching - Research, study, and planning skills are involved. Lesson planning skills will cause higher level processes to be used. Peer teaching may often be more effective than adult to student instruction in such areas as teen-age drinking and driving, or respecting the power of an automobile.

Exploring Production of Cars and Their Major Parts - This can be accomplished via study, field trip, or interviews with those engaged in car production. Skills of setting purpose; outlining information needed; planning the trip, study, or interview; organizing the data collected; and planning the presentation of data are all important.

Safety Designs - This could involve developing a car or elements of design for all cars that would make driving safer. This allows creativity to come into play. A study would have to be made of all unsafe or not-as-safe conditions that exist. It might involve interviews with salesmen, repairmen, inspection station owners, manufacturers, or accident victims.

Police Observations - Students may ride in a police car for a length of time to understand the police point of view.

Role Playing - Students can simulate driving situations that involve high anxiety, anger, or stress. This will build the repertoire of responses to such situations, as well as develop skills called for in role playing.

Debates - Students can have debates about issues in driving that are important to them. Debates have their own set of high level skills that are needed to prove/disprove a particular point.

Historical Studies - These could include the history of the auto, famous men in the auto world, popular songs that were written about cars, or racing, to name a few. Tracing timelines of important events calls for research skills.

ENGLISH:

The area of English offers a wide variety of rich opportunities for the gifted learner. The whole area of communications is vital in our society. Leaders and those in the front in their fields must be able to get their messages across. At the same time, society needs the aesthetic side of communication - the products of those whose perceptions and expressions will add pleasure to many lives.

Small Group Writing - Assign small groups a given situation or story line; each person is to write from a different point of view. The skills of identification, logical development on a consistent basis, and comparison-contrast can be developed. This can also be a dramatization situation for younger children.

Identification of Propaganda Techniques - Students look for these techniques in advertising and other writing. Critical thinking, categorizing, and inferencing are three major skills in this type of activity.

Propaganda Writing - Students can prepare propaganda ranging from ads to essays. In this the forms of propaganda will have to be studied, the message planned, and style made to conform to purpose.

Newspapers - Students can design and write newspapers for the classroom, grade, department or subject area, or building. This can be for in-school and/or outside news. The skills in this experience are numerous. Parent volunteers can be enlisted for a cooperative experience.

Literary Magazines - These also provide a real writing outlet for prose and poetry, practical and creative writing. Magazines can be prepared on an informal basis, or the results can be housed in a more formal binding in the library. Students should be encouraged to submit their products to commercial publishers for the experience.

Editorials - Students can write editorials on school, local, state, national, and peer group issues. This experience allows students to practice logical thinking and provides an outlet for their ideas and problem-solving ability.

Topical or Affective Poems - Students can write poems about topics such as division in math, famous people, a country, weather, a machine, cooking, a friend. This can be challenging, and will create an awareness of many facets of creative writing. The activity may cause vocabulary to be used not commonly thought of in poetry.

Literary Groups - Students may be grouped to work from guided discussion sheets or under the direction of student leaders. This provides practice in independence, allows mental-aged peers to pursue topics at a higher level, provides leadership opportunities, and enables assigned work to be above normal class level.

Exercises - These can take many forms such as creating a new alphabet, constructing crossword puzzles, dramatizing, creating a new language, writing original captions for displays, writing ballads or paradies, illustrating books or book covers, producing films, making cartoons about grammar.

Writing Experiences - These can take a variety of forms.

- allowing younger students to tape or dictate their stories to parents or older student volunteers
- practicing writing in various forms such as legend, fable, myth using today's topics as a base
- making a dictionary of favorite words
- making a dictionary of peer-group talk
- maintaining diaries, journals
- mriting telegrams with a message (requires an economy of words)
- writing a students' Book of Quotations (ala Bartlett)
- allowing some time for writing that no one will see (gives status to writing for pleasure)
- corresponding with professional writers.

Debates, Panel Discussions, and Seminars - These offer opportunities for research, leadership, practice of organizational skills, logical thinking, and presentation.

Word Origin Studies - This involves all research skills.

Media Studies - This involves research, visitation planning, interviewing, and reportorial skills.

Vocabulary Development - These activities are especially appropriate for gifted learners. A Category-of-the-Week type activity to see how many words they can generate can be very motivating. Examples of categories are SOFT WORDS, LONG WORDS, FEELING WORDS, etc. This method encourages students to discover their own vocabulary rather than working to learn someone else's.

FOREIGN LANGUAGE:

The study of foreign language can be thought of as another subject to be learned, or it can be viewed as another aspect of life to be experienced. These extension experiences are suggested with the latter view in mind.

Foreign Study and Travel - These activities can be very important to gifted students. In this way other-culture understandings take place on a people-to-people basis, giving new perspective.

Contact with Foreign Nationals - Interviewing techniques and getting first hand information helps develop understanding of differences and likenesses.

Foreign Vocabulary - Common words, phrases, and social amenities can be taught in the elementary school as different nations are studied or discussed.

Foreign Country Interest Center - The use of records, tapes, travel brochures, and other print or media can be set up on a continuing basis by the teacher or student. Skills utilized are those of research, study, preparing guide questions, and locating material. Different countries can be highlighted.

Cultural Studies - Students can conduct in-depth studies of famous people, art, architecture, history, or customs. These can be made and presented in many forms. Source materials, such as French historical papers about early Pittsburgh and newspapers in other languages, lend a reality to the study. The most important skill utilized in this activity is that of questioning. Student need to recognize the need to use primary sources.

Mock Travel Bureaus - This requires study of how travel agencies operate, interviews with travel agents, reading time tables, interpreting brochures, planning tours, and sales skills. This also opens up career opportunity awareness.

Film or Tape Productions - Such productions call for the practice of skills like topic selection, identifying objectives, planning, writing, organizing, producing, and presenting, as well as timing.

Career Exploration Activities - These activities in related international careers develop locational and interview skills and involve practical writing skills when seeking information.

Foreign Correspondence - Letter exchange with pen pals, government officials, and famous people can be a highly motivational experience.

International Activities - Students can participate in school or community activities of a world cultures nature such as attending local institutes, seminars, visits with foreign dignitaries when they are in town, foreign film classics, art, music, and artifact displays.

Foreign Affairs News Desk - This can be instituted for the experiences of a reporting and analysis nature. It does not have to be restricted to the country of the language being studied. This will cause students to be alert to related items in the print and other media.

Ethnic Studies - Such studies can provide opportunities for studies of a personal, regional, or special interest nature. Research skills are called into play. Family trees provide practice in sequencing, categorizing, and setting up hierarchical charts.

Vocabulary Games, Crossword Puzzles, and Anagrams - Development of these can provide variations on study topics and real problem-solving situations both in the making and doing.

Writing Poetry, Riddles, Sayings, and Captions - This writing offers real applications of learnings and an outlet for creativity.

Cartoons, Comic Strips, and Posters - Preparing these calls for real tests of communication and creative abilities.

Culture Comparison Projects - These can involve skills of collecting, organizing, analyzing, and presenting data.

Dictionary of American Word Origins - Researching origins from foreign lands can be a high interest activity. Place name origins also can be used. Categorizing by origin and problem solving are two major thinking skills practiced.

Foreign Language Assemblies - These can combine the culture and the language of the country. Planning a program calls for decision-making, organizing, sequencing, and problem-solving skills.

Fine and Practical Arts - Using artistic talents can result in representative art work of the country or models depicting representative scenes, buildings, etc.

Comparative Studies - These can be undertaken when two languages are being studied.

Early Language Study - The study of a foreign language on a formal or informal basis can be introduced earlier than is now the practice.

Foreign Language Newspapers - Studying these allows students to compare reports of incidents with the manner in which they are reported in U.S. papers. Also, students will be able to compare what is perceived as being important.

Foreign Radio Programs - Ham radio operators or persons with short wave radios can tape foreign programs in the other languages and in English for the same purposes as with newspapers.

HEALTH/SAFETY:

There are many challenging, higher-level activities in health and safety that can be offered to motivate gifted learners.

Safety Checklists - Checklists can be constructed for each room of the house or school. This activity makes the student conscious of the various safety features in the facilities. Students also can conduct a safety survey and report the results to the safety officer of the school, or in the case of the home, to their parents.

Montages of Food Groupings - Students can represent balanced meals and other health and safety concerns. Locational and reference skills, reading food charts, making decisions, and organization are skills called upon.

Health/Safety Career Interviews - These can be designed for broad or deep studies, calling upon the skills of planning, formulating questions, research, and the interviewing process itself.

Career Shadowing - This activity involves observing a person for a given length of time in one of the careers identified. It involves interviewing, observation, listening, notetaking, summarizing, and reporting skills.

Graphing Health and Physical Characteristics - Doing this for individuals or groups will give practice in knowing how to prepare charts and translate data into physical representations.

Models and Charts of Body Parts - Making these gives opportunities for creativity. The study involved in detailing the model and the math in scaling or measuring are two important skills developed.

Internships - Students can serve for a day or two (longer terms would probably be planned on a district basis) in an office, hospital, or other career-related place of business. Interning would involve being able to participate in activities of the career rather than just observing.

Community Survey on Safety or Health Issues - This involves identifying purpose, constructing forms, interviewing, analyzing, and reporting results. This could be as small a survey as one block or neighborhood.

Health or Safety Lessons - Students can prepare and teach a lesson based on the district course of study or identified needs to teach to peers or younger children. Planning, organizing, and presentaiton skills are practiced.

Creative Writing - This can involve writing poems, fanciful stories, dramas, cartoons, comic strips, songs, and advertisements about health and safety; all provide opportunities for creative expression.

TV, Movie, or Slide Shows - Student productions engage all types of planning, organizational, presentation, creative writing, and mechanical skills.

Analyzing Foods or Commercial Products - This analysis can allow for setting up laboratory experiments, conducting them, reporting results, and all the skills inherent in those activities.

Mental Health Studies - These studies, as well as those on physical health, can be highly attractive to some students. Studies of emotions, drives, motivation, habits, and ways of causing change are just a few topics.

Studies of the Role of Governmental Agencies - Research on the role and impact in the health and safety of the public will call for inquiry and reporting skills.

HOME ECONOMICS:

The practical arts programs are usually highly individualized. Perhaps they start from common points with a group, but do enable the students to utilize their full potential in how far they can progress either in regard to processes or finished product. This individualization very often fulfills the requirements of an appropriate program for gifted learners. In addition, individual and small group take-offs can be provided.

Clothes Design - This activity combines many skills and talents to be sure the finished product is functional, aesthetic, and well-constructed.

Gourmet Cooking - This activity allows students to utilize advanced skills in following directions, creativity in utilizing ingredients, and timing of processes.

Idea Boxes for Crafts and Hobbies - Direction-writing skills involving clarity, sequencing, and completeness, plus organizational skills are employed.

Teach-a-Craft Time - Providing this opportunity develops many of the skills of the "Idea Boxes", but also involves teaching skills.

Related Studies - Conducting studies such as history of dress, styles, designers, commercial products, and foods calls on study and research skills.

Career Exploration - Students can investigate careers in home economics. They may interview people like a tailor, dressmaker, designer, buyer, store owner, dietician, cafeteria worker, or food service manager.

Case Studies of Younger or Older Children - Such studies involve planning, interviewing, observation, notetaking, outlining, generalizing, and summarizing skills.

Recipe Collections - Students may compile collections of classmates', elderly folks', parents', and ethnic groups' recipes. This involves surveying and classifying or categorizing skills.

Cartoons, Films, Filmstrips, Slide Shows, Comic Strips, Charts, and Models - These enable presentations of materials to be made in creative ways.

Study and Action Groups - Groups may be convened on issues of concern to their age group with the results to be reported to the appropriate agency. This involves all study skills and accuracy of reporting.

Food Origin Studies - Conducting studies in natural and man-made categories will create an awareness of the degree science is supplementing or supplanting natural dietary needs.

Doll Clothes - Students can make clothing based on themes such as dolls from around the world, time periods, styles, or future needs. This activity calls for research, attention to detail and understanding the symbolism of clothing.

INDUSTRIAL ARTS:

The practical arts programs are usually highly individualized. Perhaps they start from common points with a group, but do enable the students to utilize their full potential in how far they can progress either in regard to processes or finished product. This individualization very often fulfills the requirements of an appropriate program for gifted learners. In addition, individual and small group take-offs can be provided.

Shadowing - This involves observing an employee to see the vocational applications of school courses. It sharpens questioning, observation, notetaking, and interviewing skills.

Related Studies - Studying the history of machines, inventions, and working with different materials will call upon research skills.

Biographical Studies - Studies of inventors, industrialists, architects, or artists in wood, metal, and plastics will involve research skills, raise awareness about what those people experienced, and acquaint them with their problem-solving methods.

Interviews or Correspondence - Initiating interviews or correspondence with people in related areas calls for interpersonal skills.

Studying Materials - The study of woods, metals, rocks, and plastics including their properties, uses, or how to get the most from them develops an aesthetic appreciation for capabilities in carving, sculpturing, and manufacturing.

Combination with Art - Combining a unit with the art teacher in such areas as sculpturing, carving in woods, or creating mobiles in metals calls for synthesizing of aesthetic decisions, mechanical skills, and artistic skills of those arts.

Charts, Cartoons, Films, Filmstrips, Comic Strips, and Posters - Making "how to" materials can give opportunities for creative expression in the processes, tools, or safety of the industrial arts program.

Antique Tool Displays - Setting up such displays involves locational, interview, and design skills.

Career and Hobby Explorations - Exploring vocational and avocational opportunities involves study skills, interviewing, visitation planning, analyzing, and summarizing skills.

Future Studies - These studies about materials, design, and manufacturing involve data collecting and predicting skills.

MATHEMATICS:

Not all gifted learners are outstandingly productive and/or creative in math, as is true with other subjects. Many of them may not be interested in math. Even some who are very good to outstanding, i.e. who are using their ability, do not have a strong interest in math. These factors have to be taken into account when providing for the gifted learner in the math area.

Acceleration - In the first instance the content is delimited to its essentials before students get to it, and in the second students are enabled to go at their own pace. In both cases, practice that may be required for most students is reduced or eliminated when possible for the gifted student. Unneeded instruction is also eliminated.

Independent Study (individual and small group) - This is an essential alternative in this area. Students who are highly productive and/or interested in mathematics usually need and want to be able to move faster.

Long Range Assignments - Closely allied with independent study, assignments should range from several days to a whole unit. This provides students with opportunities to budget time, learn on their own using the teacher or each other as resources, and utilize creativity in problem attacking and solving. For those who work faster. It provides time to do some enrichment activities.

Biographical Studies - Biographies of famous mathematicians involves research skills and make students aware of problems and strengths of people who had gifts like them.

Historical Studies - Studying the history of mathematics and its applications causes insights into the relationships between math and economics, science, technology and other elements in our culture.

Above Level Math Texts - Provide a set of above level mathematics texts in an open location or the library so that students with an intensive math interest may study anything to any degree or depth that they wish. This provides another form of acceleration or enrichment and enables self-motivated students to advance.

Advanced Mathematics Tools - Be aware of mathematics tools that are available at upper grade levels throughout the district so that identified interests of students at any level can be matched with necessary tools.

Problem Construction - Provide opportunities for students to construct problems based on general topics that will arise. Quantitative-based problems that arise in school can be expressed by students in mathematical terms.

Mathematics Games - Provide opportunities for the students to construct mathematics games. This allows for the creative student to engage in a real problem-solving situation. "Puzzles" and "How To" sequences provide other outlets for creativity and analytical skills.

Mathematics Shortcuts - Encourage students to find shortcuts that can be applied in all or most situations. This causes them to look beyond each of the teacher presentations.

Field Mathematics - Mathematics applied in real situations offers many opportunities for practical experience and mechanical skills beyond those required in the classroom.

Word Problems - Open-ended questions that call for problem solving offer a variety of options: How much does it cost to . . .? How much material will it take to . . .? How much time will be required for . . .?

Symbol Origin Studies - Studies of mathematics word and symbol origins can develop an appreciation of the need for precise language in mathematics, as well as learning the bases of how words originated or are formed.

Models, Charts, Diagrams, Flow Charts - Making these involves high level translation, manipulation, planning, organizing, and study skills.

Calculators and Computers - Individual or group projects utilizing these can be both entertaining and instructive. Either working from activities in books or creating some of their own can call for a high degree of direction-taking and direction-giving skills, as well as providing for a creative and analytical pursuit.

Mathematics Fairs - These provide incentive situations for students to show their inventive, creative, process-oriented products.

Peer Teaching - Peer teaching and tutoring calls many high level skills into play.

Studies of Career Applications - Studying practical areas such as insurance, tax accounting, and banking involves goal-setting, interviewing, and research skills, to name a few.

Career Explorations - Students should be encouraged to explore math-related careers. Interviews with people in a variety of occupations with regard to the role of math in those occupations will bring a perspective to the students' thinking about mathematics.

Math Books - Compilation of books on the market dealing with mathematics involves bibliography-writing skills and locational skills.

Visits to Computer Centers - Field trips can be an incentive to some, a learning experience for others, and another dimension to career decision-making for others.

Study of Practical Utility - A study of effect or use of mathematics in family life (not occupations) will make students aware of the importance of mathematics in everyday life.

Mentors - Using mentors with highly gifted students in mathematics will enable the students to progress beyond the regular program.

Mental Arithmetic - Many opportunities to do mental arithmetic should be given. Estimating in mathematics, like predicting and anticipating in life, is a high level thinking skill.

MUSIC:

The music area of any school curriculum includes performing, technical studies, and appreciation. Dance, instrumental, vocal, and production are four basic components from which any planning for gifted learners may develop.

Composing - This offers one outlet for creative talent either as an individual or group task. The amount of basic knowledge needed is extensive and requires much study. An awareness of what it takes to compose a work of music and have it appreciated by others will be two valuable learnings.

Lyric Writing - This activity, or using music as mood setting for a poem, provides another creative outlet. The importance of meter and form when setting words to music will be heightened.

Biographical Studies - Biographies of famous people in the music world will develop study skills and give an added dimension to understanding, appreciating, or performing their products.

Early Lessons - Giving opportunities to begin instrumental lessons early will enable the students to have more years of practice, participation, and production.

Performance Group Experience - Enable students with outstanding skills to be a part of organized groups, both vocal and instrumental. Those students who show real talent should have a chance for the acceleration of being with older students, whose skills they equal. Grade and/or chronological age should not be barriers to this type of scheduling.

Performance Opportunities - Increasing formal and informal opportunities for practice and performance will help develop audience presence and confidence for those who have performance capability either individually or in a small group. This could take such directions as the provision for repertory sessions, musical study halls, class sub-grouping, individualized course element allocation, creation of a variety of small performing groups, and using activity periods.

Conducting, Arranging, and Choreographing - Opportunities for these experiences can utilize existing talents or broaden the musical experience.

Career Exploration - Studies of careers involve seeking out as well as bringing in a variety of people in various music roles.

Contact with Professionals - Interviews, visits, or correspondence with professionals to learn how they work, how they prepare to work, and how they get their ideas, call upon interview, observation, and discussion or questioning skills.

Field Trips - Field trips to practices and performances of professional groups aid in the development of critiquing, observation, and comparison-contrast skills.

Mentors - Mentors may be used from the community-at-large to work with students of exceptionally high ability in composing or performing areas. Working with a person who has expertise in the area of interest of the student is an incentive.

Historical Studies - Studies of the history of music with regard to use, development, periods, forms, or age-relevance, involve study and research skills.

Performances - Be aware of all musical performances in the district by school and non-school groups so that students at any grade level can participate in the experience.

Music Collection - Making collections of songs based on topics, themes, or issues of the day provides an outlet for locational and organizational skills. These collections could be made by booklet, audiotape, or medley performance.

Song Writing - The possibilities may exist for writing the words and music for a class, building, school, or community song. This could also be extended to include special events or issues in the school, community, state, nation, or world. This will involve collecting data, decision-making, creativity, and synthesizing.

Broadcasting - Disc jockey opportunities may exist at various times before, during, and after the school day.

PHYSICAL EDUCATION:

As in the fine and practical arts, the physical education program offers the capability of providing for individual differences in enabling students to develop proficiencies and skills to the limit of their abilities. While it is recognized that time is a limiting factor, there are activities that can be suggested to enrich the program.

Games - Designing new games or activities with accompanying rules can stimulate creativity while at the same time increase awareness of the elements of game design.

Dance - Interpretive dance offers opportunities for creativity of movement to different musical forms.

Teaching - Enabling students to teach a unit, game, or lesson (either teacher-prepared or one that they have designed) teaches planning, organization, and evaluation skills.

Historical Studies - Studying the history of a sport or a particular topic like the Olympics calls upon research and study skills.

Biographical Studies - Studying biographies of famous athletes and/or writing to sports stars or sports organizations helps develop communication skills.

Interviews - Interviewing sports stars or school athletes calls for planning and interviewing skills. It gives insight into other students' drives and purposes. It brings perspective to what it takes to be outstanding.

Related Studies - Doing studies of topics such as human motion development, and building well-conditioned bodies can call on research, interviewing, and reporting skills.

Writing - Writing articles for the school or area newspaper calls for planning, organizing and decision-making skills.

Career Studies - Students can explore careers related to physical education through observations, interviews, and research projects.

READING:

Many gifted learners enter their formal schooling knowing how to read. They have already invented their own decoding system and may not need instruction or practice in many of the skills in the reading process. One way to accommodate for these students is acceleration in reading; another is enrichment. Many of the activities suggested in other areas also could be used with the entering or accelerated reader.

Reading Value - Make reading a valued skill. Older students can read and report back on questions raised by other students at lower grade levels.

Reading Comprehension Development - Base comprehension development activities on interest inventories. The stories in the basal-type reader are probably not stimulating to the gifted child who can read beyond the basal level. These students may leave the basal text early for comprehension development and move into an individualized or small seminar group reading. Many gifted students prefer non-fiction rather than fiction.

Discussion Sessions - Enable students to conduct discussion sessions with small groups using a prepared learning guide or by training a student leader.

Wide Range Assignments - Use wide range reading assignments calling for utilizing or collecting data from various types of print and AV materials. These assignments can be based on topics, themes, or problems and can even call for a blending of fiction and non-fiction as in the science or historical novel area.

Library Time - Increase students' library time.

Questioning - Be sure your questioning techniques call for higher level thinking. Allow students to construct questions for the class.

Reading Time - Permit students to use reading time for in-depth exploration on subjects of their interest from other areas.

Discuss Reading - Make it possible for students to read and discuss the reading with younger students, particularly younger gifted learners.

Book Review - Serving as book reviewers for the library can call for different skills, promote reading for different purposes, and be of benefit to all students.

Great Books - Junior or regular great books can operate within the schools using trained lay teachers.

Parent Volunteers - Using parent volunteers to read classics and other fine literature can sharpen students' listening and literary appreciation skills, as well as develop an appreciation for oral interpretation by master readers.

Writing - Writing their own stories, poems, or endings to stories involves placing themselves in the role of an author and developing skills in decision-making, collecting and organizing data, vocabulary, organization, characterization, mood, and physical setting.

SCIENCE:

Science is rich in opportunities for providing developmental experiences for gifted learners. The progress of people has been made possible through the curiosity and answer-seeking drives of those who wonder about interpersonal and intergroup relationships and the relationships between people and their environment. The knowledge explosion will continue to accelerate. Being a generalist in regard to science is impossible today. There are, however, processes, experiences, and basic knowledges that students should have in order to enable them to make the knowledge of the world of science somewhat manageable, and to aid in decision-making about the degree of interest in science in general, or in an area of science in particular. These suggestions speak to enriching content yet enabling students to experience being a scientist in a small way.

Invention - Opportunities to invent machines, systems, and processes to solve problems give practice in observing, planning, designing, and implementing.

Futuring - Futures planning opportunities to think about people's needs and problems to come provides knowledge in determining what can be done to enhance positive objectives and reduce negative trends.

Collections - Making common or individual shoe box collections involves categorizing and classification skills. Identification of some items will call for study and library skills.

Visual Displays - Cartoons, posters, direction-giving picture stories, photographs, films, videotapes, and bulletin boards built around some topic, theme, or process enable another type of creativity to be used in explaining, making a point, or interpreting.

Case Studies - Case studies of people, groups, and animals make students aware of another process used in investigation.

Field Trips - Field experiences for specific purposes involve skills of planning, interviewing, observing to collect data, organizing data, reporting, and evaluating.

Special Classes - Enrolling in or visiting special classes at places like the science center, museums, nature study groups, or scientific groups enable students and others with like interests to work with experts in the field.

Advanced Texts - Above-level science texts and other printed materials should be available in the classroom or library for students with advanced knowledges and skills. Many of these students have reading as their major learning mode and therefore having an abundance of printed material provides appropriately for them.

Science Fiction - Writing and reading science fiction by scientists and futurists like Isaac Asimov can arouse curiosity about what is or is not probable or possible.

Demonstrations - Opportunities to present demonstrations for classmates or other groups involves leadership development, teaching, and communication skills.

Science Fairs - Science fairs can provide incentives to engage in problem-solving, research, or reproduction of other's research and development.

Field Studies - Field studies offer hands-on experiences to apply principles and processes learned in class. Studying water pollution, making a garden, developing a plan for shrubbery, making a nature trail, and studying plants are some possibilities.

Incubation Studies - Incubation studies provide opportunities for real life studies, case studies, and care and feeding studies.

Clubs - Clubs are fine outlets, whether sponsored by the school or the community. Clubs such as astronomy, radio, archeology, electronics, geology, greenhouse, and nature trails have application as well as study components.

Community Experience - Enabling students to engage in scientific, medical, and technical arts provides those students with that type of talent an opportunity to apply it. The skills of study, observation, attention to detail, and accuracy will all be involved.

Related Studies - Studies of cycles or how something is made will employ many higher level skills involving collecting, analyzing, and organizing data and decision-making and planning for methods and modes of presentation.

Mechanical Design - Opportunities to design a machine or apparatus to get a particular problem solved or process accomplished can provide for other talents of a technical or creative nature.

Mini Courses - Mini courses provided through such vehicles as learning guides, learning packages, kits, study guides, or the contract plan can provide for individual or small group independent study.

Career Exploration - Students explore science-related careers through observations, interviews, and research projects.

Sensory Extension - Activities that provide for extension of the senses provide knowledges, perceptions, and motivation for further study. Activities using the microscope or telescope or absence of light extend the visual sense. Absence of sound or amplification of sound will extend the hearing sense. Experience with balance and unbalance gives different perspectives. Texture studies and odor experiences extend the tactile and olfactory senses.

Mapping - Mapping activities of terrain or the sky call for the skills employed by a cartographer or an astronomer.

Advanced Equipment - Make provisions for students with advanced skills and knowledges to work with advanced equipment or in upper level labs. Gifted learners should not be restricted to using materials and equipment thought of for their grade or age. All materials and equipment in their area of research should be available to them. Some industrial labs and equipment might be available to them at higher levels.

AV Material - Allow students to order AV material from the regional film library or other school sources. Also, they can usually use the services of the public and college libraries.

Work Stations - Setting up real working situations, like weather stations, can provide for a variety of talents and skills such as research, design, recording, interpreting, and forecasting.

Newspapers - Producing a science newspaper provides purpose for wide reading, take-off points for in-depth studies, and an awareness of rapidity of change in the field.

Handbooks - Students can develop handbooks on "how to go about studying . . ." This activity uses expertise in a given field and shows that it is valued. These handbooks can become a part of the class or building library.

Material Use at Home - Enable students to check out lab and AV materials for home use. An alternative would be for the district to schedule the labs to be open at night or on weekends.

Controlled Environments - Students can develop a controlled environment in available space using conditions of sound, light, colors, textures, temperature, purpose, etc.

Study of Superstitions - The study of superstitions past and present can stimulate students to examine origins, rationale, and the psychology of those areas.

Internships - Enabling students to serve working internships for extended periods of time in hospitals, laboratories, or computer centers enables them to see the variety of roles and skills involved, as well as performing real work. Observation and evaluation skills are called into play.

Photography - Photography itself offers many opportunities in its various modes. Micro-photography and time-lapse photography are but two modes that can bring new perspectives to research.

Experiments - Opportunities to set up full experiments with control groups offer other possibilities for teaching experimental designs.

SOCIAL STUDIES:

The social studies may offer the richest base area for providing for the gifted learner. Other areas have some parameters that are not found in the social studies. The closeness to daily life-situations of the topics, themes, problems, and issues that arise from the social studies make them naturals for the functioning and contributing that is to be expected from the gifted learner.

Discussion - Having opportunities to develop discussion techniques, both as participant and leader, teaches students to recognize strategies participants use and how to handle them. Students should be given opportunities to practice these skills in the elementary and middle schools. In the high school they should be provided with printed materials and AV resources in order to study the art of discussion and small group dynamics and apply the results.

Values and Morals - Experiences with values clarification and moral education activities are essential for gifted learners because they have the potential to be leaders. Strategies to develop critical thinking about how values are formed and applied need to be used. (Often, many lay people are well-trained in these areas and are available for volunteer teaching.)

Civic Involvement - Provide opportunities for involvement and training in civic responsibilities: attendance at chamber of commerce meetings; attendance at civic, governmental, or service group meetings; participation in community drives; study of community issues with follow-up to appropriate people; civic projects in class of the issues of their peer group; doing real work in an election year; serving on ad hoc committees of the school board.

Map Making - Provide experiences with map making and the variety of types of projections. This is another locational and reference skill that can cause awareness of how much information can be gathered from nonprint materials.

Charts and Graphs - Give exposure to many forms of charts and graphs and the guidelines for their construction so that the students can learn how changing one axis can cause the appearance to change. They ought to have experience charting and graphing data in many forms. They should have the experience of making two or more different depictions of the same data. They will learn to match the data to the best form of graph or chart to get the message across.

Community Resource File - Compiling a community resource file causes students to plan the data needed, prepare an efficient form, select methods of collection, and determine how to file the information. Students having this file are then enabled to seek out their own resources.

Family History - Writing an autobiography or tracing the family tree or history can involve using all the skills of an historian. It can involve interview skills, oral history, research, and the use of various forms of media such as charts, pictures, film, and illustration.

Family Crest - Designing a family coat of arms or flag involves decision-making about family characteristics and organizational and aesthetic skills in combining the decisions into a design.

School or Community Crest - Extending the family history and coat of arms or flag to the school or community enables all the skills involved to be extended to a larger group.

Biography - Doing a biography or case study of a peer or adult calls for many organizational, research, and writing skills.

Library or Class Book - Making a library or class book of community or school helpers allows artistic talents to be combined with writing talents either on a individual or group basis. Photography can be used as well as drawings. Decisions about what goes into preparing such a book, organization, who to include, and interview skills all call for higher level thinking.

Field Trip Routes - Planning routes of on-site and off-campus field trips can establish the purposes; then students guide exploration to best accomplish those purposes. Off-site route planning can involve map reading, prior visitations (a valuable step in planning), map making, and locating alternatives.

Slide Shows - Doing a slide show of the community or school calls for the variety of skills in any reporting task.

Interest Centers - Setting up foreign country, state, or other interest centers has many benefits. (See Foreign Language Section).

"How-to-Make" Boxes - Designing "how-to-make" boxes can be tied into many related social studies activities. Direction-giving and sequencing are the two major skills involved.

Higher Level Thinking - Using high interest activities involving higher level thinking skills such as forecasting, predicting, and hypothesizing stretches students' thinking. Examples are:

- What if (something that exists or happened) did not exist or did not happen?
- What would it have been like to participate in an historical event (named)?
- What will the future bring (provide solid bases for predictions)?

Seminars - Students setting up seminars and securing their own speakers create activities that (l) arise out of a need of a given group of students, and (2) bring into play the skills of objective or purpose setting, location, scheduling, questioning, and discussion.

Divergent Point of View - Making sure that materials with divergent points of view are available makes possible comparison-contrast thinking, separating fact from opinion, recognizing author or publisher bias, recognizing propaganda techniques, and compromises in thinking.

In-Depth Studies - Engaging in in-depth studies of contemporary problems, issues, and trends on a local, state, national, or peer group basis gives practice in the skills of planning, organizing, analyzing, and presenting.

Picture Files - Instituting picture files as a resource causes students to think categorically, plan for systematic collection, and raise awareness of specific characteristics of these categories.

Environment Studies - Studying the effect of the environment on human beings provides for a research perspective and causes students to do critical thinking about the relationships that might, do, or ought to exist.

Unit Teaching - Teaching social studies using the unit method of teaching provides the flexibility needed for students to work with differentiated objectives, topics, purposes, and learning modes in different settings with the teachers utilizing a variety of techniques.

Oral History - Collecting oral history from older people, long-time residents, and famous people can add perspective to students' lives, in addition to giving practice in interview techniques.

Montages - Making montages of people, places, things, events, issues, themes, and topics gives practice in locational, arrangement, aesthetic, and study skills.

Visual Displays - Making dioramas, models, illustrations, cartoons, comic strips, constructs, and photographic essays involves the higher level skill of translation, gives experience with varied forms of communication, and enables creativity to be utilized.

Newscasts - Listening to or watching newscasts during school hours utilizes both reporting and analysis skills. This activity also can provide a jumping-off place for further study. Listening and observation skills also receive practice.

Propaganda Techniques - Recognizing the forms and impact of propaganda techniques is essential for those students who have the potential to be leaders and decision- makers.

Writing - Many real and valid writing opportunities should be made available. A variety of forms such as reporting, editorializing, summarizing, essay writing, promoting, and creative writing (using the avenues of prose and poetry) should be involved.

Bibliotherapy - Acquainting the students with bibliotherapy helps students in self-evaluation, as well as creating an awareness of another approach that can be used as a basis for discussing individual and societal problems.

Visits to Other Schools - Visiting other schools in the district at the same, higher, or lower levels can give opportunities to deal with comparison-contrast and analysis. Students can orient other students at lower levels to what they will find prior to moving up. Visitations with gifted students from other schools serves the same purposes.

Interpersonal Relationships - Conducting sessions on interpersonal relationships can result in reducing problems of the gifted learners in the classroom situation.

Futures Studies - Engaging in futures studies is important for gifted learners because of the potential they have for shaping it.

Studies of Rights and Responsibilities - Conducting studies of individual vs. societal rights and responsibilities calls for a high level of thinking and valuing decisions and creative thinking.

Issue Studies - Studying real issues that arise in class provides opportunities for group in-depth study and problem solving.

Appendix

Characteristics of Gifted Learners

Gifted learners demonstrate *advanced* levels of *comprehension*.

Gifted learners show unusually *varied interests* and have a high degree of *curiosity.*

Gifted learners' *interests* are often both *eclectic* and *intensely focused.*

Gifted learners need *little external motivation* to follow through in work that excites them.

Gifted learners have a high degree of *heterogeneity* in regard to their *abilities.*

Gifted learners have the *ability to elaborate* and the ability to produce new steps, ideas, responses, or other embellishments to a basic idea, situation, or problem.

Gifted learners have a *need for freedom and individuality* in study.

Gifted learners are willing to examine the unusual and are *highly inquisitive.*

Gifted learners have a large and *advanced vocabulary.*

Gifted learners have a capacity for *retaining and processing information.*

Gifted learners *see* direct and novel *relationships* between known and new information.

Gifted learners are able to generate *original ideas* and solutions.

Gifted learners can become adept at *self-evaluation* with guidance.

Gifted learners have a high degree of *initiative and intrinsic motivation.*

Gifted learners are *interested in many thoughts*, ideas, societal problems, and topics usually *associated with older students and adults.*

Gifted learners are *creative* in many areas of endeavor.

Gifted learners demonstrate *leadership* qualities.

Gifted learners *prefer to be with older students* because they are closer to their mental age.

Gifted learners have a well developed *problem-finding ability.*

Gifted learners have advanced *verbal and reasoning abilities.*

Gifted learners have a *keen sense of responsibility*, conscientiousness, and perseverance.

Gifted learners have a *high desire to learn.*

Gifted learners have a *highly developed retention and recall system* , along with a long attention span.

Gifted learners display *considerable drive* to accomplish their goals.

Gifted learners enjoy *challenges*, learning new things and new ways of doing things.

Gifted learners are *perceptive and observant* beyond their years.

Gifted learners have a *highly developed imagination.*

Gifted learners have a *highly developed sense of social concerns.*

Gifted learners evidence *interest and pleasure in intellectual pursuits.*

Gifted learners *learn things at an earlier age* than other students, including ability to read and understand number concepts.

Gifted learners *learn things more quickly* than other students and with less practice.

Gifted learners are better able to handle *abstraction.*

Gifted learners are *fluent and flexible thinkers*, being able to use many different alternative approaches to problem solving.

Gifted learners display a *questioning attitude* and seek information for the sake of having it as much as for its instrumental value.

Gifted learners have a highly developed *moral and ethical sense.*

Gifted learners have a well developed *sense of self* and realistic ideas about their capabilities and potential.

Gifted learners, particularly those that are highly independent, like to *work alone* at times.

Gifted learners have *good organizational ability.*

Gifted learners often prefer to *learn on their own* rather than being taught by an authority.

Gifted learners are *high risk-takers*, adventurous, and speculative.

Gifted learners *adapt readily* to new situations.

Experts Who Have Had a Significant Impact on the Education of the Gifted

Alexinia Baldwin
Walter Barbe
Benjamin Bloom
Jerome Bruner
Barbara Clark
Nicholas Colangelo
Rita Dunn
J. Feldhusen
Lynn Fox
James Gallagher
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Matthew Lipman
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